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The Preparation of Smallpox Vaccine

BY J. G. FITZGERALD, M.B.,

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THE present method of obtaining vaccine virus or smallpox vaccine, as it is more commonly called, is possibly not entirely familiar to all those who are at times required to use it. The following description of the method may serve therefore to answer certain questions which may have arisen.

First of all, the virus is obtained from young, vigorous calves. These calves are as a rule a few weeks old. They are, when received at the Connaught Laboratories at the University farm, kept under observation for one week and carefully examined to make sure they are healthy. During the time they are in use, they are fed only on milk, and sterile sawdust is used for bedding purposes.

Immediately after the period of observation, the animals' hair is removed with clippers, and the calf is put in a porcelain bathtub and given a thorough scrubbing. This completed, the animal is now installed in a model sanitary room in which there are terrazzo floors, and tiled walls, and which is properly lighted, heated and ventilated.

The suite of rooms used for the purpose of housing the calves, vaccinating them, etc., consists of a preparation room, operation room and calf room. All have terrazzo floors, tiled walls and every convenience found in a modern hospital operating room. The plant was designed by and built under the direction of one of the best known firms of hospital architects on the continent.

Having then a perfectly healthy calf, kept under ideal sanitary conditions, the third factor necessary is a supply of so-called "seed-

virus." This is the vaccine virus which is used in the propagation of the virus from calf to calf. The seed-virus used in the Connaught Laboratories is obtained from the Research Laboratories of the Department of Health of the city of New York. The director of these Laboratories is Dr. W. H. Park, one of the leading bateriologists and hygienists in America. This seed virus is produced under the license of the Treasury Department of the United States, and the production is supervised by officers of the United States Public Health Service.

This seed virus then is produced under the most ideal conditions. It may here be stated that calves are not susceptible to nor can they convey the causative germs of spyhilis or leprosy as is sometimes maintained by those who are opposed to vaccination.

The calf before it is vaccinated with the seed-virus is again carefully washed, and the area to be vaccinated is shaved and cleansed, and just before the vaccination is done this area is covered with sterile towels. The vaccination of the calf consists in making a series of very light scratches and distributing the seed-virus over the area so prepared. In this operation, which is done under strict aseptic conditions, the same care is taken as that which is exercised by any surgeon in a modern hospital.

When the vaccination of the calf has been completed the animal is again put in the calf-room, fed with milk, carefully attended, and kept scrupulously clean. The temperature of the calf is taken twice daily. On the fitfh or six day after vaccination the typical vaccine vesicles appear and the vaccine virus is then removed. The calf is chloroformed, and after death the vaccinated area is carefully cleansed and the pulp, consisting of the vesicles, vesicular fluid, etc., is removed.

A complete post-mortem examination is now made. Each of the internal organs is examined carefully and thoroughly, and if either the organs or the body of the calf shows any evidence of any diseased condition the vaccine is of course discarded. This examination is comparable to the inspection of meat intended for human consumption which is made at the abattoirs.

The vaccine pulp is now sent to the University Laboratories for final preparation. The pulp is carefully ground with a mixture of sterile glycerine and carbolic acid. After grinding, the mixture is forced through a very fine bronze wire gauze. The resultant emulsion closely resembles cream when the grinding has been completed.

The mixture of glycerine and carbolic acid very rapidly kills the bacteria which are present in the pulp, and in the course of several weeks (and before the vaccine is sent out) the vaccine is practically free of all bacteria. Elaborate tests are then made to determine whether any pathogenic germs remain in the virus.

Bacteriological cultures, aerobic and anaerobic, are made and laboratory animals are injected with the vaccine and with fluid culture material. As soon as it has been definitely determined that there are no pathogenic bacteria in the virus, its potency or power to give satisfactory "takes" is ascertained by vaccinating rabbits with samples from each lot of virus. After these careful tests on rabbits and when typical "takes" have been produced, and all other tests are completed the vaccine virus is ready for distribution. It is carefully filled into sterile capillary tubes, each capillary tube containing sufficient vaccine for one person, or it is put into sterile glass vials sufficient in amount for fifty vaccinations.

It should be remembered that while many tubes of vaccine virus contain no bacteria whatever, and no virus ever contains pathogenic bacteria the presence of which can be determined by animal inoculations, still the most rigid requirements, such as those of the United States Government (which exercises supervision over vaccine virus production) does not require that the virus be bacteria free. It is required, that it have very few bacteria, that none of these be pathogenic and that the virus itself give satisfactory "takes." The vaccine virus prepared and distributed by the Connaught Antitoxin Laboratories of the University of Toronto, more than meets these requirements of the United States Government.

Considerable notoriety is sometimes given, through paid advertising inserted by those opposed to vaccination, to the fact that vaccine virus may, and sometimes does, show the presence of staphylococci. When examined bacteriologically, such saprophytic staphylococci which are always present in the skin, are sometimes present in the virus; but it should be remembered that even if the virus were sterile, as indeed it often is, it is at once contaminated when placed on the arm, by the cocci in the skin of the arm of the person who is being vaccinated.

The very careful post-mortem examination of the calf renders impossible the transmission of tuberculosis, just as meat inspection renders impossible the spread of this disease when calves' meat is used as food. It can be very definitely asserted therefore that not one of the diseases mentioned is ever transmitted by the vaccine virus producd by the method here outlined. It is sometimes argued

that tetanus is caused by vaccine virus. This is impossible because the animal inoculation would at once reveal the presence of lockjaw germs, and the culture fluids would indicate the presence of its toxin, since both of these are injected into guinea pigs which are very susceptible to lockjaw.

Furthermore, in a careful examination of several million capillary tubes in the Hygienic Laboratory of the United States Public Health Service, no tube of vaccine has ever been found to contain tetanus bacilli. Where tetanus follows vaccination, it is due to infection of the vaccination wound with dirt containing tetanus germs, just as tetanus was observed amongst men in the army whose wounds were infected with highly fertilized soil containing tetanus germs.

Finally, it has recently been alleged that diphtheria and Eucephalitis lethargica (sleeping sickness) follows vaccination. There is not a vestige of sound evidence to support such statements. Both of these diseases have been observed in communities where smallpox did not exist and where vaccinations on a large scale were not being carried on. Diphtheria has been very prevalent in the city of Buffalo during the present fall, and various other American cities where smallpox has not been reported, have also had an unusually large number of cases of diphtheria recently. Many cases of Eucephalitis lethargica have been reported in Winnipeg during the past two months, but neither smallpox nor general vaccination can be offered as an explanation for its occurrence there at this time.

Therefore, it may be stated that none of the allegations of those opposed to vaccination, in regard to vaccine virus being responsible for the death or disability of those vaccinated, can be substantiated.

In conclusion, a word or two is necessary in reference to the reactions following vaccination. Vaccination when it is successful produces in those vaccinated the condition known as vaccinia or cowpox. Vaccinia is characterized by a local and general reaction, varying greatly in severity in different individuals, depending upon various factors such as degree of susceptibility, whether previously vaccinated, potency of the virus, etc.

In typical primary vaccinia the incubation period is four to five days, and immunity follows in from eight to twelve days after vaccination. If vaccination is performed on a person who is developing smallpox, and who is in the last few days of the incubation period of the disease, vaccinia and smallpox both run their course in such a person at the same time. Vaccination in the first few

days after infection, may, however, result in protection being conferred, that is the person has vaccinia, but not smallpox. After one successful vaccination or revaccination the condition of vaccinia usually has a shorter incubation period, runs a more rapid course, and frequently produces less severe local and general reactions. Persons who are naturally immune to vaccinia and to smallpox, or because of previous vaccination are immune, when vaccinated afresh have only a slight local reaction. This reaction when tpyical is a definite indication of immunity, perhaps not complete or permanent, but sufficient for the time being.

The only other consequence of vaccination may be a simple trauma, where a slight abrasion of the skin is noted, and no immunity reaction, accelerated reaction or ordinary primary vaccinia follows the application of the virus. This is what occurs when the vaccination is not properly performed or when the virus is inert.

The character and severity of local and general reactions following vaccination vary greatly as has been noted above, but it may be stated that in early childhood these reactions are practically always less severe than in later life. Therefore primary vaccination should be done in children preferably during the first two years of life, when reactions are less severe and where care can be taken to avoid secondary infections of vaccination wounds.

Since vaccination is the best means now available for the control of smallpox it is most desirable that all health departments and physicians initiate and continuously carry on a thorough campaign of education in regard to vaccination. In this way only can prejudices and superstitions in regard to the question of the merit of vaccination against smallpox be successfully overcome.

Some of the Successes and Some of the Failures of our Profession

With Reference to Preventable Disease.

Dr. W. B. Moore, M.H.O., Kentville, N.S.

(*Association of Medical Health Officers of Nova Scotia, July 1, 1919.*)

WHILE the Association of Medical Health Officers, of which I have the honour of being President, is composed of those members of the Profession who have their duties and obligations clearly defined in the Public Health Act of the Province. I shall venture to make a few remarks with reference to possibilities beyond such limitations, and applicable to the whole Profession in its relations with the General Public, and with reference to its influence upon the State.

With reference to the part played by our profession generally towards the attainment of such a desirable objective as the combination of the sound mind with the sound body, in the largest possible percentage of the human race, possibly the traditions and modesty of our Profession would better justify an admission of our failures rather than an exploitation of our successes, but it seems only fair to ourselves and educative to the Public to enumerate some of the latter, as well as to acknowledge the former. While it must be conceded that some agencies outside of the Medical Profession have contributed to the great movement for the prevention of disease, yet there is no doubt that most of the great discoveries and the initiative of their application to the welfare of humanity in that direction, have been due to the study, observation, and researches of members of our profession, generally without fee or reward, and often the result of patient toil and experience, gained at personal risk and suffering of humble workers, who practically unknown, unheralded, unhonoured and unsung, have slaved for the welfare of humanity through the centuries from the early ages to the present time. It is a paradoxial and rather wonderful fact that of all professions and business occupations of the human race, ours has been the only one with a continued history of earnest endeavour by its members, to lessen, rather than to increase or develop the actual sources of income upon which their livelihood depends. The truth of this statement has been demonstrated so often and so constantly that it is beyond question, and yet it is so at variance with the training of those in other lines of work

and the general instincts of the Public, that it is not to be wondered at that the world neither understands nor appreciates it, and of course has little or no gratitude for it, and even worse, fails to co-operate either by effective state legislation or by individual or collective effort, to assist the profession in its constant struggle to vanquish, whenever possible, the diseases which afflict humanity, when evident, and to prevent their development, by combined and individual efforts. It is scarcely necessary to enumerate to an intelligent general audience, and much less to the members of the Profession present, some of the outstanding facts in the history of disease which demonstrate some of the successes of our Profession in the prevention or material mitigation of many of the most terrible diseases afflicting humanity. The observations of Dr. Jenner, an English country doctor, led to the practice of vaccination, with millions of lives saved, and human suffering indescribable prevented, and it seems a reasonable assumption that the milder forms of the disease in recent times may be due to the effects of vaccination upon the ancestors of those who have never themselves undergone the operation. Then consider the relative control of that terrible disease, Asiatic Cholera, by efficient sanitation, and of Yellow Fever prevention, by destruction of the breeding places of the cause. Typhoid Fever has been so controlled during the war by preventive innoculations and sanitation as to have shown little of the virulence of the past, and the relative prevention of that dread scourge, Diphtheria has been accomplished to a wonderful degree by the use of the well-known antitoxin. Then consider the effects of medical science, observation and experience upon the housing, living conditions, and the sanitary construction and ventilation of public buildings in which there is still room for improvement, although much has been done, also food inspection, public school inspection, the value of fresh air and sunlight, improved milk supplies, sewerage and pure water supplies, and methods of control of contagious and infectious diseases generally. Surely these are successes, and while their development and value have required the intelligent co-operation of the laity, yet to the Medical Profession must be ascribed the credit for their inception and efficiency.

Let me refer for a moment to the progress that has been made in our own province during the last few years along the lines of the conservation of the Public Health. Mainly through the influence and activities of our Provincial Health Officer, who is also our secretary, our Provincial Health Laws have been consolidated and brought up to date and made more efficient, measures have been instituted to grapple with the great problems of the prevention or at least the lessening of such widespread and destructive diseases as Pulmonary Tuberculosis and venereal diseases, and a system calculated to ensure Co-ordinate and Co-operative Medical

Health Officer's work throughout the province with greater professional control and influence has been inaugurated. Further this organization has been made what is reasonably hoped to be a permanent institution whereby at annual meetings and otherwise "Esprit de Corps" a strong fraternal feeling may be established, a community of interest may be developed with the general public, and matters of professional and public importance may be discussed for the education of ourselves and for the enlightenment of many of the intelligent laity with whose company we are honoured this evening, whose co-operation we need and desire, and believe we shall have to the degree of such understanding and appreciation of our objects and ideals as may come by means of such association with us, and who in turn will doubtless generally instruct those who, by reason of natural limitations or circumstances, may be less fortunate in their mental equipment than themselves. So much for some of our successes to date, not painted in excessively roseate hues, I hope, and yet fairly bright and true, justifying an optimistic belief in the possibilities of the future.

Now, with regard to the drab colours with which the picture of our failures must be painted. Technically and professionally we have failed to discover the cause or causes of cancer, and, of course, cannot apply any means of prevention. We are still hoping that continued patient research may enlighten us further with regard to this dread disease, and there is no reasonable doubt of future success in the light of past achievement in other directions. With regard to our lack of efficient means of preventing such devastating scourges as pulmonary tuberculosis and venereal diseases, our failure is not so much due to technical or professional shortcomings, as to our obvious inability to control or even to materially change for, I fear a long time to come, those complex conditions of domestic, social and industrial life, upon which their existence so largely depends. Even so, our profession must still be the main dependance of the State for intelligent assistance in the application of any really efficient measures for the material mitigation or prevention of the evils. Our similar lack of power of prevention of the lamentable increase of various degenerative diseases of the heart, arteries, kidneys and nervous system, must obviously be ascribed to the same causes and our control of them logically presupposes our control of modern life conditions to which they are due. Clearly our limitations are marked, and yet we must cultivate an optimistic spirit. It is too much to expect that we can, by purely professional agencies, remove the causes referred to, but we can, by initiative resulting from their recognition, lead to a more widely spread knowledge of their dangers, and by education, etc., we may in a measure lessen their evils. I may be pardoned for again referring to my hobby regarding the inefficiency of the profession at

large in controlling preventable diseases beyond the scope of the Medical Health Officer's duties, by reason of our antiquated system of depending on other than professional observation, experience and training in determining the necessity of and instituting preventive measures for the avoidance of disease before its occurrence. Since 1912, when I read the first paper upon the subject at a meeting of the Nova Scotia Medical Society at Lunenburg, I have inflicted upon some of you from time to time, several papers advocating a different system of relationship of the medical profession and the general public, by which the first departure from the normal could be determined by the trained eye, ear and judgment of the physician by close observation of the individual from birth until death. To-day, as we know, under our present system the patient is usually seen when the prevention of trouble has not been attempted, and too often when cure is impossible. Pardon me for repeating what I have often said before, that if the physician could have a close and frequent observation of the individual at all stages of his or her life, such a degree of diagnostic acumen and skill in determining the first existence of weakness or tendency to disease, would be developed as we have hitherto unknown, and a wonderful range of professional control of preventable diseases of many kinds would be accomplished. This, of course, is beyond the limitations of our functions as Medical Health Officers, so clearly defined in the Public Health Act, but I think we should develop a broader vision of our possibilities than merely acting as sanitary inspectors of dirty premises and quarantining houses for infectious diseases. Of course these remarks apply to the whole profession with reference to its relation to the public, but I must confess my inability to suggest any practical revolutionary change by which this can be readily accomplished. Personally, I have done a little along the lines suggested, and a few of my families who recognize the value of such a system of regular supervision expect me to visit them frequently without being sent for, and I have been able in a few instances to recognize and to avert serious dangers to the health and development of some. Public school inspection, with reference to the adoption of a system of improved observation of the individual by the physician, is clearly a long step in the right direction, but, in my opinion, cannot compare with such a relationship between physicians and families, as would not only enable them to have a constant supervision of the growth, development, tendencies and weaknesses of individuals at all periods of their existence, but in many ways might improve their home life and conditions. Dr. Fraser Harris, of Dalhousie University, is to give us a paper at this meeting referring to the question of State Medical Service, and something of that sort may be the solution of the problem of a more efficient way of dealing with preventable diseases,

by closer professional association with the people. I think I may class among our failures our regrettable and even lamentable lack of power as a body in our influence upon the state, and after centuries of toil, observation and study for the benefit of humanity to a much greater degree than for the benefit of ourselves, we must confess to a much less leverage and pull with the governments than that possessed and exercised by the average ward politician. It is doubtful even in purely medical legislation or in legislation affecting the people in matters upon which the medical profession only is able and qualified to judge that we can exercise very much leverage, or control of legislative bodies. Permit me to present a couple of marked illustrations of this fact. Instead of following the advice of the only source of authoritative opinion, that is the medical profession, and enforcing vaccination as a general compulsory measure to prevent small-pox, the politicians both in the Old Country and in this cater to the ignorant and prejudiced masses by the introduction of a conscientious objection clause, and so the thing goes on. Then witness the lack of courtesy to our profession, when no expression of opinion is requested through our various representative bodies and societies with regard to the sections relating to the medical profession in the Nova Scotia Temperance Act, where the lawful usage per diem of one of our most powerful medicinal agents is determined by a non-professional body. Drastic and insulting clauses have been passed in that Act, affecting the rights and privileges and interfering with the judgment of the practising physician in the application of remedies for the treatment of disease, and hundreds of conscientious, honourable and capable members of a profession with the history of ours, are driven to change their therapeutic practice, and dosage of a drug in any given case, and to give other medicines, or to become law breakers. For the offences of the few in the profession who may have abused their privilege, the many are penalized, and the only qualified individuals to administer powerful drugs are obliged to make their knowledge and experience subservient to the dictum of non-professional extremists. Surely one might expect at least a conference with representatives of the profession before the passage of such a despotic law, and surely the history and status of our profession should justify such an expectation. While the evils of a qualified autocracy may be evident, those of an unqualified autocracy are certainly not negligible, but on the other hand, often constitute the worst form of despotism, and we have too many instances of this in so-called Democracy. This may seem to be a digression from the text, but it is along the lines to the point I wish to make, and indicates in a marked way our failure to influence legislation in matters directly connected with our professional work. My firm opinion is that a qualified autocratic power exercised

by the medical profession with its sense of responsibility and obligations to society, upon all matters within the scope of its relations to the public, pertaining to individual and public health and the prevention of disease would confer infinitely more benefits and less evils, both to the individual and to the state, than exist under the limitations of to-day. Let us consider for a moment the ways and means whereby this failure may be corrected. Of course such organizations as this and our provincial and local societies must and do exercise some considerable influence upon the governing bodies of the state and resultant legislation, but we are still far from that proper and desirable position of dignity and power to which the profession, with all its shortcomings, is surely entitled. I am convinced that only by closer association with the people in a professional relationship as I have previously indicated whereby we will be looked upon as the safe pilots to enable them to avoid many of the dangers of diseases and suffering, and an oversight of their welfare, resulting in a feeling of dependence upon our advice, may we be able to exercise that influence upon the state which may surpass that of the clergy and even equal that of the politician. There is some evidence now that governments are awakening to the necessity of recognizing the requirements of the people, by movements towards the establishment of Departments of Public Health, both for the Old Country and for Canada, and we may hope that professional rather than political control may dominate their activities.

Britain has Ministry of Health

"London, January 13—Dr. Christopher Addison, President of the Local Government Board, has been entrusted with the establishment of the British Ministry of Health. In outlining the work to be done by the new ministry, Dr. Addison said to the *Sunday Observer*:—

"'It will be a few months before the Ministry of Health can be established. For many purposes affecting the service the administrative unit must be a large one. A small area cannot possibly be self-contained, in a medical sense. It cannot have resources sufficient to meet all its emergencies.

"'What we seek to establish is really a medical intelligence department. It will have its laboratories with everything necessary for research and will have access to all information gathered by public medical officers. It is frequently possible to see an epidemic in the distance. We shall soon look to our Intelligence Department to give us due warning of the approach of anything of the kind and to advise us as to our counter-offensive.'"

Halifax, N.S., Jan. 15, 1919.

To Medical Health Officers:

A letter has just been sent out to wardens and mayors asking the co-operation of the various municipalities and towns in the enlargement of this Department as follows:

1. Appointment of an inspector of health, to be an expert in diagnosis of tuberculosis and also an epidemiologist.

2. Appointment of three full time District Medical Health Officers to co-ordinate work of various local M.H.O.'s and local Boards of Health in their respective districts, to pay especial attention to sanitation of schools, lumber camps, manufacturing establishments, etc., and to arrange for medical supervision of school children.

3. Appointment of a public health nurse for each county.

4. Establishment of a health clinic in each county, especially to deal with tuberculosis and the causes of infant mortality.

Just a few words in conclusion to those who have honoured us with their presence this evening. Of course it is difficult for the public to understand how a profession, individually and collectively, deliberately lessens the chances of obtaining more of what most people work for, by making every effort to prevent diseases upon the existence of which their income depends. I do not know that we clearly understand it ourselves, or can clearly explain such an anomaly. If you will permit me for a moment to express my personal fancy with regard to its explanation, I think that while it may be due in a measure to the fact that our pride and vanity are challenged by the menace of disease, and we hate to admit either defeat in its cure or its prevention, yet my belief is that a stronger influence exists in the development of our innate sense of chivalry, compassion and spirit of knight-arrantry to help the under dog, and to attempt its expression allegorically, we desire to destroy the demon of disease who is holding suffering humanity in its cruel grasp. With such a crucial test of our true professional instincts and qualities of soul, with few exceptions, we lose sight of the sordid object, pecuniary gain, in the broader vision of higher ideals of humanitarianism and science. However it may be explained, there is, fortunately for the world, continued evidence of the existence of such a professional creed, and our presence here this evening forges another link in the long chain of evidence to prove it. We are not vain of our successes. We regret our failures, but one likes to remember that tribute paid by the lamented Robert Louis Stevenson to a profession which could not save him, a gratitude in marked contrast to the ingratitude of many who have been saved when he once wrote in effect as I remember it, "I think it would be found in the final analysis that the medical profession has at least accomplished as much good, and at least has been guilty of as few mistakes and errors of human fallibility as any other class or profession in the line of human endeavour."

A Plan for a More Effective Federal and State Health Administration.

FREDERICK L. HOFFMANN, LL.D.
Third Vice-President and Statistician the Prudential Insurance Company of America

(*Continued from our last issue*).

The Hygienic Laboratory and Specialized Research

The work of the Hygienic Laboratory at the present time is subdivided into four divisions, respectively (*a*) pathology and bacteriology, (*b*) pharmacology, (*c*) zoology and (*d*) chemistry. The question may be raised whether the Laboratory should not concern itself more extensively with problems of medical entomology regardless of the fact that already much admirable work in this field is being done by the Bureau of Entomology of the Department of Agriculture.* A certain amount of duplication of effort is absolutely unavoidable. To carry on malaria research, for illustration, without the closest possible cooperation of a well-organized department of medical entomology is practically impossible. As generally understood, the main purposes of the Bureau of Entomology of the Department of Agriculture are economic, and such research work, for illustration, in connection with malaria and mosquitoes as has been carried on by the Bureau has been primarily, if not exclusively, of an economic nature, emphasizing the relation of malaria frequency to variations in crop productions, etc.†

The question may also be raised as to whether the Hygienic Laboratory should not give more consideration to autopsy records, which,

*The field of medical entomology is immense, and even more so than that of economic entomology. An excellent outline of the essential facts which require to be taken into account is the "Handbook of Medical Entomology", by Riley and Johannsen, published by the Comstock Publishing Company, Ithaca, N.Y., 1915. A more popular work on the subject is "Insects and Disease", by R. W. Doane, Assistant Professor of Entomology, Leland Stanford University, London, 1910.

†A full account of what the Department of Agriculture has done in this connection has not yet been made public. The results of the experiment and demonstration at Mound, La., are, however, sufficiently conclusive to justify the suggestion that inquiries of this nature should be conducted on a much larger scale in the future. After all, it is largely upon economic grounds that public health measures must rest if they are to be assured of continued and substantial financial support. See in this connection my "Plea and Plan for the Eradication of Malaria Throughout the Western Hemisphere", and also my additional discussion of the "Malaria Problem in Peace and War", which includes a number of references to the demonstration at Mound, La.

at the present time, if collected at all in local and State hospitals, are generally deficient in matters of important details, in that the objective findings are not clearly stated, or that the anatomical diagnosis is not concisely set forth in a manner suitable for future collective investigations. There is the utmost urgency for increasing the number of autopsies, especially in public institutions, and efforts in this direction, sustained by a Federal Health Administration, would prove unquestionably more successful than has been the case in the past.*

Attention may here be directed to the first three Annual Reports of the Medical Research Committee of the National Health Insurance of Great Britain, the work of which is carried on respectively by (1) a Department of Bacteriology, (2) of Bio-Chemistry and Pharmacology, (3) of Applied Physiology, and (4) of Statistics. The general plan of research includes such special subjects as Tuberculosis, Rickets, the Hygienic Relations of Milk, the Rheumatic Affections, the Diseases of the Nervous System, the Thyroid Secretions, Dust Inhalation and Pulmonary Diseases, Oral Sepsis, Diabetes, Anaphylaxis, Diseases of the Heart, etc. Special inquiries have been made in connection with the war into such subjects as Cerebro-Spinal Fever, Neurological Inquiries, Industrial Fatigue, and the Health of Munition Workers, Diseases of the

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*It is a serious error to carry the conclusions derived from autopsies too far as regards the anatomical and pathological findings concerning the true cause of death. As observed by F. J. Smith, in the *British Medical Journal* for December, 1905, "It is absolutely essential in arriving at a correct conclusion that the clinical history should be co-ordinated with the pathological findings". There is a large field of most useful information, as yet more or less neglected on the part of those who are in complete control of all the facts. Every large hospital, at least, should have a resident pathologist and there should be strict conformity to a well-established technique from the general examination of the body to the process of dissection as such and the careful as well as thorough examination of all the regions and particular organs of the body. Frequently insufficient attention is paid to special conditions and lesions which may have a most important bearing upon medico-legal questions involved in the cause of death. One of the best works on the subject of postmortem examinations is a treatise by William S. Wadsworth, M.D., Philadelphia, 1915. Another useful work is entitled "Dissection Methods and Guides", by David Gregg Metheny, Philadelphia and London, 1914. Most useful as regards the practical value of autopsy findings and their application to problems of general medical practice is "Gleanings from the Calcutta Post-Mortem Records", by Leonard Rogers, M.D., Calcutta, reprinted from the *Indian Medical Gazette*, 1908-13. Of special value to the student of the subject are the case records, both ante-mortem and post-mortem, as used in the Weekly Clinico-Pathological Exercises at the Massachusetts General Hospital, edited for the use of practitioners by Richard C. Cabot, M.D., and Hugh Cabot, M.D. Four volumes have been published, with numerous illustrations, charts, etc., all of which are an admirable model for other institutions to follow. There are no reasons why this method should not be insisted upon by the American College of Surgeons as one of the prerequisites of efficiency in hospital management, conceived in its higher aspects as a public health function.

Soldier's Heart, etc.* Thus far ten special reports have been published, including a report on the Incidence of Phthisis in the Boot and Shoe Trade; Recovered Cases of Intestinal Diseases; the Mortalities of Birth, Infancy and Childhood, etc. Of practical value also, are the plan and scope of the scientific industrial research of the Special Committee of the Privy Council, which to date has issued three annual reports, and a Special Report on Industrial Research in America, suggestive of the urgency of a similar publication on organized research in medicine and public health.

The National Research Council of the Council of National Defense, of which Prof. Geo. E. Hale is the chairman, has an important committee on Anatomy, of which Prof. Henry H. Donaldson, is the chairman; a Committee on Anthropology, of which Prof. Wm. H. Holmes is the chairman; a Sub-Committee on Bio-Chemistry and a General Committee on Medicine and Hygiene, with Col. Victor C. Vaughan as chairman. This committee has a Sub-Committee on Psychiatry, the chairman of which is Prof. Stewart Patton. In addition thereto, however, the Council has organized a General Committee on Physiology, with Prof. Walter B. Cannon as chairman; and a Committee on Psychology, with Col. Robt. M. Yerkes as chairman. The work of this committee has been subdivided into sections on the Psychological Examination of Recruits, on Aviation, on Re-Education and Vocational Training and Vision. It should not be difficult after the war to reorganize the work of these committees and sub-committees and coordinate the work of such a permanent organization to the activities of the Hygienic Laboratory of the Federal Public Health Service.

Medical Practice, Pharmacy and Dentistry

The section on medical practice, pharmacy and dentistry will probably be the one to which most serious objections will be raised on practical grounds. The time is bound to come, however, when this

*The publications of the Health of Munition Workers Committee of the British Government are models of scientific inquiry and concise presentation of essential facts bearing upon extremely important aspects of the labour problem. Of these, for the present purpose Reports Nos. 7 and 8, on Industrial Fatigue and Special Industrial Diseases, are of exceptional importance; but reference also requires to be made to Report No. 10, on Sickness and Injury, which includes suggestions for systematic records, etc. The general results of the inquiry as presented in twenty special reports have been summarized in a Hand-Book on the Health of Munition Workers, issued in London, 1917. In addition thereto an extended report has been issued on Industrial Efficiency and Fatigue, than which no more useful statement of facts and conclusions on the subject-matter under discussion has thus far been published. No similar inquiries corresponding in plan and scope as well as scientific thoroughness in the presentation of the facts have as yet been forthcoming for the war industries of this country.

problem will have to be met and when uniformity in medical practice and interstate rights and privileges will have to be granted to graduates of recognized institutions passing examinations in conformity to Federal requirements. How far this section would ultimately encroach upon collateral branches of medicine and surgery, such as osteopathy, chiropractique, etc., may well be left to the future. In any event, even if at the outset entirely without power to establish standard requirements of medical practice, such a section would serve the extremely useful purpose of collecting information and of assisting in the solution of interstate medical problems which are now a matter of serious concern in many sections of the country. Such a section would also be in an admirable position to best utilize the large amount of information collected by the Medical Section of the Council of National Defense and to keeping such information down to date, for possible future military or other requirements. How far this section should include the nursing profession, both public and private, may also, for the time being, be left undecided.

There is much danger of confusing the true functions of the medical profession with the services of men employed in public health activities. It is grossly misleading to assert that "the physician is the guardian of the public health". Equally mischievous is the assertion made in a recent monograph on "The Practice of Medicine as a Vocation", issued by the Federal Board for Vocational Education, that "the work of the physician is twofold: It is his duty to cure those who are sick and to keep the well from becoming sick". The physician in general practice is absolutely without responsibility for the health of those who do not consult him. There is nothing contained in the curriculum of even the best medical schools which thoroughly fits a physician for the practice of preventive medicine in an advisory capacity. The same conclusion applies to medical examiners, who are almost without exception men trained in the practice of medicine as a healing art. The successful prevention of disease, individually or collectively, requires a totally different course of training and involves a largely different set of facts and principles than the training for medicine in general or specialist practice. No system of clinical medicine, however extensive, can materially aid in the solution of the many practical questions which confront those who are concerned with the prevention of disease or with physical development and growth or with abnormalities of metabolism and nutrition. The status of the physician in general practice is sufficiently difficult and burdensome not to require the discharge of additional and frequently highly responsible functions in the administration of public health. That such services are rendered in a large measure and particularly in rural or isolated communities and frequently with

beneficial results is not an answer to the argument here advanced that preventive medicine in a separate and distinct branch of science in which strictly medical considerations whether pathological, physiological or clinical are distinctly of secondary importance.

The standards of medical education are becoming more rigid and effective. It is held, and properly so, that a medical course of less than four years yields unsatisfactory results. To require four years of exacting study in subjects which lie largely outside of the practical operations of a modern health department is to waste much valuable time and opportunity urgently required for other purposes. Arguments have been advanced that before the war the number of physicians in general and specialist practice was entirely too large and that therefore the economic status of the medical profession was far from satisfactory. Evidence, however, has been forthcoming to prove that there is gradually an increase in the income of medical graduates from first-class medical schools, or approximately from $900 during the first year to nearly $5,000 in the fourteenth year. If the decline in the death rate is a conclusive index of the diminishing frequency of diseases requiring more or less prolonged medical attendance, there is no doubt much truth in the assertion that the economic position of at least the general practitioner has in many cases deteriorated, for if, for illustration, in a community in which malaria and typhoid fever have been excessively common there is a practical eradication of these diseases in consequence of modern health activities, there must necessarily be a material reduction in the physician's income.

It would therefore seem of the utmost importance that the medical profession should clearly recognize the necessity of a complete change in its attitude and give more encouraging support to those who may wish to take courses in preventive medicine in the furtherance of which only a minimum amount of knowledge* concerning anatomy, physiology and pathology is required. With important modifications this conclusion also applies to the position of those who prefer to specialize in medical examinations and industrial hygiene. The field of opportunity for remunerative employment in these branches is constantly broadening, in contrast to a diminishing area of usefulness in general practice. If, for illustration, the present movement for a nation-wide campaign for medical examinations and re-examinations gains the required public support, there will arise a demand for a highly specialized type of ability which is, generally speaking, not available. The recent work on "Medical Diagnosis" by Charles Lyman Green, author of a standard work on "Medical Examinations for Insurance Purposes", clearly emphasizes

*See, for illustration, "Essentials in Medicine", by Charles P. Emerson, M.D., New York, 1911.

the gradual change in the point of view which must govern in the ultimate development of a new science of public and personal hygiene, in which the physical examination of the person and the qualified observation of at least the outward sign of disease will receive prior consideration. In such a science the essentials of physical anthropology will demand equal consideration with the fundamentals of clinical medicine.

Physical examinations require to be clearly differentiated from medical examinations. Both may be made properly by different persons or they may be made by one person thoroughly qualified to make both; but it does not necessarily follow that a physician, however familiar with physical and clinical diagnosis, is competent to pass upon the numerous questions involved in a physical examination, as has been illustrated by the experience under the First Selective Draft. The conduct of so-called "Medical Examination Campaigns" cannot be approved of unless the work is done in a thoroughly qualified manner. In the long run not much is gained but much of real value may be lost by careless methods of examination. It will never be possible within the limitations of our knowledge to enable a community to "take account of stock" physically as it has been argued is the common practice in ordinary business. The parallel drawn is both inexact and misleading. Nor will it ever be possible to give "the human machine" a "thorough overhauling", for here again the parallel of comparing the human body to a machine is inexact and misleading. There is far too much involved in examinations of this kind to permit any one to take reckless chances with the health of the individual as well as with that of the community. Even though much good may be done in one direction by the ascertainment of a certain amount of existing but unobserved disease, much harm may be done, on the other hand, by impairing public faith in the real value and proper function of medicine as a healing art.

Problems of Anthropology

The section on physical anthropology should be in charge of a thoroughly qualified expert whose main function at the outset should be to collect in a systematic manner the vast amount of existing anthropometric material. Assistance should be rendered in the preparation of uniform or standard blanks and the perfection of standard tables of physical proportions, all of which are at present more or less inadequate for practical purposes. There should be active co-operation, of course, with the anthropometric investigations of the Children's Bureau and other governmental or private agencies concerned with the ascertainment of physical growth and development. The U.S. Bureau of Education in 1914 issued a Bulletin on Physical Growth and School Progress, prepared by Prof. Bird Thomas Baldwin, of Swarthmore College, in

which a first attempt is made to bring together the available material on physical growth with a due regard to age, grade and school standing as well as the required facts of the individual increment of growth in height, weight and lung capacity. There are included some extremely suggestive observations on height as affected by nationality, the relation of height to complexion, as well as the average height of American born children mathematically calculated by Dr. Franz Boas from the data of nearly 100,000 children in the public schools of representative American cities. Most of the data available, however, fail conspicuously, on account of the disregard of the underlying racial considerations, which explains in part the reasons why the Committee on Race in Relation to Disease (Civilian Records) of the National Research Council intends to concentrate its work in the near future upon an effort to secure more homogeneous data for more trustworthy comparative purposes. It must be self-evident that so-called *standards* derived from heterogeneous masses of statistical material cannot possibly be relied upon for a nation like the United States, where the racial distribution is perhaps more complex than in any other civilized country at the present time. The range in variation in the physical proportions of the different races is found to be much greater upon careful analysis than is apparent upon superficial consideration. Among other illustrations reference requires only to be made to the anthropological investigations of Dr. Ales Hrdlicka on 1,000 white and coloured children, inmates of the New York Juvenile Asylum, which include observations on abnormalities of the head, the hair, the forehead, the face, the ears, the gums, the dentition, the palate, the uvula, the limbs, and the body in general.

A much larger amount of material is, however, required, but unfortunately the underlying racial considerations are generally disregarded in ordinary routine examinations of children for school purposes. Data for Chicago school children or Boston school children cannot possibly be of much intrinsic value if merely presented in the aggregate and not with a due regard to race or parentage. Improved methods of physical measurements have been suggested by Miss Helen Thompson Woolley, the Director of the Vocational Bureau of Cincinnati, Ohio, in a contribution to the *Journal of Educational Psychology*, November, 1915. There is, however, as much danger of over-emphasizing the necessity for numerous and minute measurements as of underrating the need for thoroughness and accuracy in the more simple measurements of height, weight and lung capacity. In appreciation of the practical difficulties which are met with in all investigations of this kind, but particularly when applied to adults employed in industry, and which have been clearly recognized by the Committee on Race in Relation to Disease (Civilian Records), of the National Research Council, the standard card

recommended by this committee includes the following requirements: (*a*) weight, both nude and clothed; (*b*) height, standing and sitting; (*c*) arm span; (*d*) chest, at full inspiration and at full expiration; (*e*) girth, at navel; (*f*) lung capacity; (*g*) foot length; (*h*) flat feet; (*i*) hand grip; (*j*) missing parts; also eye colour, hair colour and chest pilosity. The medical examination includes the pulse (standing), vaccination scars, hearing, vision and the colour sense. In addition thereto a statement is required regarding the muscular development and the condition of the teeth (Appendix A).

The ascertainment of physical facts of growth and development is a fundamental prerequisite of rational public health administration. Thus far the U.S. Public Health Service has only concerned itself with this question in a very restricted field. In 1915 a brief publication was issued on the "Heights and Weights of Children" according to age and sex, with medical observations having reference particularly to cases of intestinal diseases. The name of the locality was, however, omitted. The value of the data, for the reason stated, is therefore materially reduced, since much, of course, depends upon the location and the character of the population as to racial antecedents. In 1916 Dr. Lee K. Frankel and Dr. L. I. Dublin published jointly a study of the measurements of boys and girls 14 to 16 years of age who were granted employment certificates in the City of New York. This publication is an important contribution to the subject, and more so in view of the fact that the elements of race and nativity were taken into account. It is to be hoped that the much larger amount of material which is now available will some time in the near future be utilized for the purpose of a more extended investigation. The increasing practical importance of the subject therefore demands its more qualified consideration by Federal and State health departments as well as by other health promoting organizations. The required progress towards standardization and unification is, however, not likely to be attained within a measurable period of time unless more substantial encouragement is forthcoming from both the government and private agencies. Whatever in the future is done in this most promising field of scientific research having to do with the growth and development of the forthcoming generation should as far as practicable be coordinated to the research efforts of the Committee on Race in Relation to Disease (Civilian Records) of the National Research Council.*

*An encouraging proof of progress is the recently commenced issue of a *Journal of Physical Anthropology*, of which Prof. Ales Hrdlica, of the Smithsonian Institute, is the editor.

Industrial Hygiene

The section on industrial hygiene, of the U.S. Public Health Service, has heretofore concerned itself chiefly with limited inquiries into highly specialized phases of the occupational disease problem in co-operation with the Bureau of Mines, the Bureau of Labour Statistics, etc. In view of the fact that the recently established section on Working Conditions Service of the Department of Labour contemplates a thoroughly well-developed division of industrial hygiene, in charge of a former specialist of the U.S. Bureau of the Public Health Service, the future functions of a reorganized Federal health service in this field will probably be still more circumscribed. That, however, may be a material advantage, in that the scientific research work to be undertaken or the co-operation required in highly specialized fields of inquiry will be concentrated upon the more subtle and difficult problems, rarely permitting of being adequately dealt with under a broader and more immediately practical division of work.

The Division of Industrial Hygiene of the Working Conditions Service is at present being organized upon the following plan of procedure:

1. To make studies of working conditions in their relation to health to determine hazardous processes and methods.
2. To formulate sanitary codes and regulations to meet health-hazards in the various industries.
3. To formulate standards of medical practice in industries and to co-operate in the betterment of medical service in industry and industrial centres.
4. To determine standards of physiological requirements for various occupations.
5. To determine methods of proper placement of workers.
6. To secure statistical data of industrial morbidity.
7. To promote facilities for the education and training of physicians and sanitarians for industries.
8. To assist industries in obtaining physicians and other technicians for industrial service.
9. To disseminate information concerning measures necessary to safeguard workers against industrial health hazards and to secure the co-operation of all elements, governmental or private, in the furtherance of the industrial health programme.

(*To be continued.*)

Social Background

The Prostitute as a Health and Social Problem

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YOU will agree with me that this is a tremendous subject, and in a paper such as this one can only speak briefly of some of its important aspects. The prostitute and prostitution have long been recognized as social and moral evils. All through the ages we find protests and sporadic crusades against them, but the efforts usually resulted in failure to eradicate the evil, and the failure is largely due to the fact that the remedies applied were inadequate and superficial. Take, for instance, the idea of driving the prostitute from pillar to post, punishing her by imprisonment and fine. Even in our own day, when we began to realize that she spreads disease and devised the newer methods, such as registration, segregation, and examination, the situation did not change much. This is all because we refused to face the facts honestly and frankly, and not only the facts but the underlying causes of this most complex phenomenon, prostitution.

Our difficulties have no doubt been largely due to the fact that prostitution is very closely interwoven with the subject of sex. The sex relation in the human, largely because of the problem of progeny, has never been faced openly, nor considered on its merits. It has always been hedged around with religious and moral doctrines, and consequently very little has been added to our store of knowledge.

As far as we know there has always been current a deep-seated belief that men at a certain age must satisfy the instinct of sex, regardless of conditions, for the sake of good health. This opinion has been fostered by some of our most eminent and high-minded physicians. It has been shared by scientists and philosophers, written about in novels, until most men and women came to think that this indulgence is not only essential to physical welfare, but to proper mental and moral development. Such a man as Professor Lecky held in his "History of European Morals" that there is no hope and no cure for prostitution.

A New Epoch.

There is where we practically stood when we were shaken out of our deep slumber by the medical facts as to the great danger of the venereal diseases that result from prostitution. This subject had been discussed for many years, before congresses of physicians, but not until 1905, when the International Congress met at Brussels, was an actual change in sentiment registered. It came to us in the shape of a resolution that sexual continence is consistent with health. This was the beginning of the new era and formed the new basis for a more scientific and intelligent attack on the main underlying cause of prostitution. In this campaign the position taken was that the old idea is wrong; that sex indulgence is not essential to good health, and that venereal disease resulting from prostitution was a great menace to the individual, community and nation.

Dangers of Venereal Diseases.

We know to-day that gonorrhoea is not as simple a disease as a cold; that it is a germ disease; that it is one of the most prevalent diseases, next to measles; that it not only affects the local genital organs, but that there is such a thing as gonorrhoeal rheumatism and gonorrhoeal heart disease; that the young man who contracts this disease even in the mildest form, unless he is completely cured, may bring the infection to his wife, even after the lapse of many years; that gonorrhoea in women is a much more dangerous disease than in men; that half of the operations performed on the former for the removal of the tubes, ovaries and uterus, are due to this disease; that it is responsible for 80 per cent. of blindness in the newly born; that it causes sterility in men and in women; that there are thousands and thousands of women who are chronic invalids as a result of the effects of gonorrhoea; and that it greatly decreases the efficiency of the individual.

Syphilis, again, we know, is due to a definite germ, is a blood disease, and highly contagious. It affects from eight to ten per cent. of the population. It is one of the most destructive diseases. It affects every part of the body as well as the mind. It is transmitted from husband to wife and then to offspring. It is responsible for the birth of diseased children, 80 per cent. of whom die. It is the cause of one-fourth of all insanity. It is one of the most frequent causes of feeble-mindedness. It greatly decreases one's efficiency and earning capacity. And we know that prostitution is the main carrier of both gonorrhoea and syphilis.

A campaign of education along these lines has been carried on in the United States for the last fourteen years in spite of ridicule and opposition, and not without considerable success. Indeed, hundreds of thousands of men, women, and young men during their adolescent period, in all classes, had been taught the new ideas and the single standard of morals. In addition new methods have been devised to deal with commercialized vice, and gradually an entire social hygiene programme has been developed which deals with practically every aspect of prostitution and its causes.

The Courageous War Programme.

When we entered the late great war and came to realize that venereal disease was one of the greatest menaces that confronted European armies, the men at the head of our government appreciated very readily that something more fundamental than was being done abroad would have to be done by us if our boys were to be protected from this menace and kept fit. We are thankful that those men had the vision and courage to accept a radical social hygiene programme that was presented to them by some of the leaders of that movement. Under this programme between three and four million boys in our army and navy were taught for the first time that sexual continence is consistent with health, and the very best preventive of venereal disease. They were taught in detail the dangers of these diseases and the truth that prostitution is the main source of these infections. In spite of the fact that most people still believe that segregated districts are absolutely necessary, especially in war ime, and that they could not possibly be abolished anyway, it was decided by those in charge of the social hygiene work that those agencies of vice must go if we were to make it easier for the boys to live up to the new standards of morals and to protect them from disease. To the surprise of the old vice lords, new law enforcement agencies were created which succeeded in closing eighty segregated districts in and near cantonments. This required wonderful skill and tact, for it was necessary to enlist the co-operation of the citizens of the respective communities, and in most cases the co-operation was extended.

Nobody doubts now that the campaign of education, with the closing up of the segregated districts and saloons, and the furnishing of all kinds of sports and recreation, helped enormously to keep up the morale and to decrease the venereal disease rate among our boys. Outside of the camp factors which contributed most to keep

the boys clean are the following: Responsibility aroused in our communities to furnish proper recreation and home protection to soldiers and sailors; the realization of the fact that the call of patriotism had stirred us emotionally and keyed us up nervously, and that the lure of the uniform was great, and consequently to keep all that in check a campaign of education and protection was necessary among young girls and women. It was made clear to thousands of young women what the government social hygiene programme was, what the boys were taught, and that the government expected them to help carry out that programme by being friends and comrades of the boys and inspiring them with the highest conception of womanhood.

While our own venereal disease rate at the beginning of the war shocked most of our draft boards, and even surprised the doctors, and while we treated during the first year of the war 170,000 cases of venereal disease, the venereal rate as the boys settled in the camps began to fall, until at the end of the war, it is stated on good authority, our venereal rate was lower than in any other army and navy in the world.

Task Not Finished.

Now that we have learned definitely what can be done with these diseases, and how vice is to be handled, it would be a crime not to continue the fight to the finish. We can easily adapt this war programme to civilian life. The government is ready to aid us in this campaign, and we hope that all the existing agencies will combine and work as hard as they worked during the war to wipe out the plague.

The Prostitute as a Social Problem.

Our attitude toward the subject of prostitution has changed greatly in the last few years. Thanks to Dr. Flexner's book "Prostitution in Europe" and numerous reports on vice in our own country, we have learned to speak on the subject more intelligently and humanely. When we now discuss the prostitute, the questions we ask ourselves are: who is she? where does she come from? and why is she there? Regarding the first question, various studies have been made at the morals courts, prisons, and other places where prostitutes are gathered and detained. All these studies point definitely to the same facts. Between thirty and fifty per cent. of all these unfortunates are mentally subnormal or disord-

ered. Most of these girls are physically attractive and sexually rather over-developed. Their mental state fits them only for menial or tiresome work at a very low wage. Yet like the rest of us, they long for comforts, finery, and male companionship and amusement. Not being able to satisfy these desires, they become easily discontented with their lot and are ready to fall as prey to vicious men who are always at hand. Seduction usually follows and the downward road begins.

This is the story of many of this type. We have here a definite social problem. These girls are not what they are because they are essentially immoral. They are generally victims of conditions that make them what they are, and it is our task to protect society from them and to protect them against themselves. By doing that we shall remove half of the prostitutes from the market. This can only be done, as we know, by establishing training schools in connection with farms to which these girls could be sent for permanent care and taught to do work which will make them self-supporting. We must go further. We must diagnose these cases early, before they do mischief and spread disease. In our public schools we ought to have qualified people to watch and study the children. Under present conditions the subnormal child is usually a nuisance to the teacher because he does not keep pace with the other children. He is usually made fun of by the rest of the pupils. He is pushed out of school early into the unsupervised home, and from there into the street to fall into delinquency and vice. The subnormal child, if given special training suited to his intelligence, can become a useful and self-supporting individual.

Ignorance as a Cause.

The other fifty per cent. that go to make up the supply of prostitutes are not so easy to diagnose or eliminate. We can only hope to do it when our society changes more fundamentally, and every child has a chance to be well born of parents physically, mentally and morally sound, is provided with a good education and special training for some particular kind of work which shall yield just remuneration. However, while we are dreaming of this millennium, there are things that we can do. There are very definite facts that we have learned about this group from cases who come into our clinics for treatment or for detention. There is a large number of girls who, because of lack of home care and protection, and because of complete ignorance as to the sex organs and instincts, have not the slightest idea as to why certain liberties with

their persons are not to be permitted, and are enticed early by boys of the neighborhood and seduced. After one sex experience it becomes harder for them to resist temptation. It is a well known fact that a great number of prostitutes come from that class of juvenile offenders.

The Economical Factor.

Then comes the girl who has not been trained for any special work, who left school early for one reason or another, who is working hard getting a wage that is far too low for the modern standards of living, and is living at home or in a boarding house with very few comforts. If she lives at home, there may be a large family of children, a grouchy or drinking father, a shiftless or worn-out mother. There is not much joy or fun in remaining at home in the evenings or on Sunday. She craves for a male companion who could take her to places to which she could not go alone, like cabarets, dances, excursions—who could take her into the country and with whom she could stay out late at night.

Here again is the natural craving for excitement. It is always easy to pick up boys. They are always at hand and ready. The first one the girl meets is good enough no matter who introduced him to her and how little she knows about him. She asks no questions provided he furnishes her with what she has been longing for. They go along for a while having a good deal of fun in perfect innocence. Then the time comes, when under the influence of a little drink or after dancing until late into the night, or resting in some isolated spot in the country, he declares his love to her, telling her that he fully expects to marry her soon, that nothing much will happen anyway if she yields, and that hundreds of others are doing the same. She, under this strong urge, without knowledge as to the real dangers, consents. Then comes desertion, disappointment, pregnancy, and frequently disease. It is hard under these conditions to go back to a dull life. There is nobody to comfort her and get her out of trouble except persons of the underworld. These are always there to promise to have a miscarriage induced, after which, they say, the girl can go on earning more money and enjoy greater luxury and excitement. Downward she goes to add to the whole unfortunate group.

Then comes a group of widows, with or without children, who are left without means of support and no qualifications to earn a living wage. Of these a certain percentage drift gradually into a life of prostitution.

What Must be Done?

Here again the lesson we have learned from the war must not be forgotten. We now know definitely that a clear scientific and frank discussion of the sex organs and instinct, and of the reasons against promiscuous indulgence, has helped thousands of girls to a better understanding of themselves, to better self-contral, and decent conduct. It has helped them to realize their responsibility to men, to understand that they must not overstimulate his already powerful urge of sex; and that comradeship and friendship must take the place of playing with sex. We also know much better what kind of protection girls and boys need, and how to furnish it. We know better than ever before that the spirit of youth craves fun and recreation, and that unless we provide these, youth will indulge in anything and everything it can find.

These are now among our social problems. Each community must realize its responsibility. For its own sake it must see that all young people are provided with more decent home conditions; with more intelligent understanding of sex; with a living wage; with the right kind of amusement and recreation.

Poverty as a Factor in Disease

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TWO years ago at Pittsburgh it was my privilege to speak to this Conference at the splendid and inspiring moment when ou nation was gathering its forces for a decisive entrance into the great war. That war has now ended in complete victory for the alliance which stood for political democracy and political freedom and political good faith; yet the world is not at peace. The northern half of Asia and more than the eastern half of Europe are in chaos. In Ireland, in Korea, in Canada, there are menacing murmurings of unrest. The war for political righteousness between the nations threatens to give place to a war for social readjustment within the nations—a war almost as bitter as the first and far more complex and more difficult to comprehend. The evil forces in this war do not all march under one flag. There are possibilities of black reaction as well as of red terror. Each nation must find for itself the right path between the two extremes.

To change one familiar metaphor for another, may we not say that each of the nations is to-day like a ship in a growing storm. In a sense your ship and mine is the flagship of the squadron; for of all the nations upon earth America is the strongest in material resources and in national unity.

We cannot stay where we are. We cannot turn back to port for it is away from the anchorages of the past that the gale blows strongest. If *we* could perhaps take refuge for a time in reaction it is certain that the weaker ships of state could never follow us. We must not dash upon the rocks and founder as Russia is foundering to-day. We must find the way through to a new and better harbor on the eternal voyage—for ourselves and as an example to the other nations of the earth.

There are some things we have learned from our war experience that will help us to formulate the sailing directions for this voyage. The clearest of these lessons perhaps is the lesson that the strength of a nation in war and in peace depends upon its spiritual unity, upon what in military terms is called morale; and morale has both a material and a spiritual basis. The British in the terrible retreat from Mons, the French in the dark days of Verdun, were upheld by a spiritual force so splendid and so supreme that it wrung victory from what seemed to be overwhelming defeat. In peace time we cannot count on such devotion. We must base our national morale in the daily tasks of life upon a certain quid pro quo. In the long run men will love their country because she is worth loving; and the nation which makes the life of the largest proportion of its citizens safe and sound and happy is the nation which will in the end triumph over internal dissension as well as foreign foes.

Health as a National Ideal.

There are many things that must be ensured to the men and the women and the children of the nation if America is to endure, and to lead other people into the harbor of the future. There must be physical health. There must be the opportunity for normal family life with a modicum of material comfort. There must be education and intellectual stimulus. There must be opportunity for the instinct of craftsmanship—the urge of creation—and for the instinct of play—the call for relaxation. There must be the inspiration of a compelling common ideal.

To-night we ask you to consider with us just one of these essentials for national unity—that of physical health. It is, perhaps, the

least of them in the sense that we would all exchange a considerable degree of health for any one of the higher gratifications. Yet these ideals should not be mutually exclusive, but the reverse; and to the extent that abounding health underlies normal family life and intellectual and productive and spiritual satisfaction it is the most fundamental and important of them all.

The health of the people then must be one of our ideals for the new America which is to be borne of the birth pains of the war. It must be ensured by the application of sanitary science and preventive medicine on a scale far greater than we have ever dared to dream. It must be ensured by a reorganization of medicine and nursing service on some social plan so that rich and poor may receive the gifts of medical science and may receive them at the stage when they can operate effectively and not, as to-day, when it is too late to do much more than ease the sufferer into his grave. These are problems for the health officer, for the physician and the nurse, problems in which most of the members of this Conference are interested as you are interested in the application of scientific research and scientific organization to the betterment of human life in every field. There is still another problem here, however, which concerns you even more directly—the problem to which the health sessions of this Conference have been directly and exclusively devoted—the problem of poverty as a factor in sickness.

Poverty and Disease.

More and more clearly it is becoming evident that many people are sick and many people die because they are poor—not only in starving Russia and devastated Belgium, but in America, as well. As we go deeply into any great public health problem, such as infant mortality, or tuberculosis, or mental disease, we find that after health organization and health education have done their best, there is still proverty to be reckoned with as a causative factor in disase. In the Johnstown survey Miss Duke tells us that the infant mortality in one ward was 271 deaths per 1,000 births against 134 for the city as a whole and 50 for the ward which showed the lowest rate, and the explanation is that "This is where the poorest, most lowly persons of the community live—families of men employed to do the unskilled work in the steel mills and the mines." Dr. Sydenstricker and his associates in the U. S. Public Health Service in a report on the relation between disabling sickness and family income among cotton mill operatives in South Carolina find that with a monthly income equivalent to less that $12 per person

(on an adult male unit basis) the sick rate was 70.1 per 1,000; with an income between $12 and $14 it was 48.2 per 1,000; with an income between $16 and $20 it was 34.4; and with an income of $20 and over it was 18.5.

We can conclude from these figures and from many similar investigations that poverty and sickness are closely correlated. We cannot conclude that the povery is responsible for the excess of sickness, for in many instances the relation of cause and effect may be reversed. People do not usually life in the poorest quarters of a city or work at its underpaid employments by choice or by accident. In general, and on the average, we shall find in such districts and such employments a concentration of tuberculous stock, of alcoholic stock, of feebleminded stock—poor protoplasm and a bad environment supplementing each other in a vicious circle.

No one can perhaps tell us just how far poverty in such cases is the real and effective cause of the failure to achieve and maintain a normal standard of physical health. It is clear, however, that there is a certain standard of income below which the maintenance of health is impossible; and it seems reasonably sure that a certain not inconsiderable proportion of the population of the United States has to-day a family income below that figure.

The Need for a Minimum Standard of Living.

If an initially normal family cannot gain a livelihood adequate for its minimum physical needs there is evidently a problem of social readjustment which our nation must face as a fundamental of post war reconstruction; but what shall we say of the family which on account of inherent physical or mental defects is unable to reach a minimum level under a wholly fair and equable basis of compensation? There are but two alternatives as I can see it; since the moral sense of mankind repudiates the rigorous application of the principle of unhindered natural selection. We can let the combination of defective protoplasm and crippling environment accomplish the major portion of its work and then salvage what we can from the wreck by some form of institutional relief. Or we can apply our social energy and our community funds to make good the deficiencies in the beginning. I have little doubt, and I think you have little doubt, as to which will prove in the long run the cheaper way, and I am quite certain that the preventive method will prove more conducive to high national morale.

The more immediate goals of the health worker—efficient sanitary administration, infant welfare, stations, clinics and dispensar-

ies, and even health insurance—are but palliative measures if it be true that a substantial proportion of our people are striving to live upon a family budget below the minimum essential for physical health. The health section has devoted all its sessions during the past week to this problem; and has suggested a definite attempt to secure the first information upon which constructive action may be based. We have asked for the appointment of a special Committee on the Standard of Living Essential for the Maintenance of Health. We hope that this committee will be organized with a membership of economists, statisticians, household administrators, dietitians and housing experts sufficiently eminent to command universal confidence. We hope it will be possible for the committee to bring in a report next year which will give us an approximate minimum for the family budget, adjusted so far as necessary to varying geographical and social environments and perhaps so connected with the index of price levels that it can be utilized on a sliding scale for some time in the future. We believe that with such authoritative data in hand there will be a powerful stimulus for each locality to determine what proportion of its population is actually below the limit of safety; and that when the facts are known the argument for effective remedies will be found to be unanswerable.

The "American Plan" for Dealing with Poverty as a Factor in Disease.

In closing, let me pass on to you a lesson I learned a short time since from a friend and fellow-townsman whom many of you know, Dr. David Lyman. Dr. Lyman was a member of the splendid group of public health workers who have helped to translate into action our gratitude and admiration for our gallant allies in France. He was for a time in charge of the organization established by the Rockefeller Foundation and the Red Cross to demonstrate the American plan for dealing with tuberculosis; and after the obvious things had been done, after clinics and hospitals had been provided and a comprehensive health education campaign was under way, problems of this sort began to arise. Jacques was a delicate child in a tuberculous family. He needed milk and eggs for which his parents could not pay. So the American organization furnished the nourishing food, not as a charity, but as a part of national preventive medicine. "Very good," said the French physicians, "but we thought this was a plan to be carried on by ourselves after

you have gone. Where shall we find the money to do such things?" "Why," said Dr. Lyman, "it is much cheaper for you to do this than to let the child get tuberculosis and care for him afterward," and the French became interested in the "American plan."

Marie was ill. She could be cared for at home if there was a room where she could sleep alone and get fresh air. There was no such room in the poor cottage. So Dr. Lyman sent for the town architect and asked him to draw plans for an additional room to be built onto the cottage. "But, what an expense?" "Far cheaper than letting Marie's sisters come down and caring for them all in a sanitarium," was the reply. It seemed logical and the French are apt at logic. "So that's the American plan," they said. "It seems a good one."

Jean must go to a sanatorium, but how can the family live without his wages? Easily enough. The Tuberculosis Organization will pay the family what he would be earning while he is being cured. "Is this not a dangerously costly precedent?" asked the Mayor. "Far less dangerous and less costly than letting the man die and supporting the family till the children are grown up—and more humane, too."

"Fine," said the Mayor, "I see it. And that is the American plan, too. How splendid and far sighted. I must come over to America after the war and see just how you do it."

Dr. Lyman tells me he is somewhat perturbed at times to know just where he will take his French friends when they come over to see the "American plan" in full operation. But it is worth while to see visions if they inspire us to remould this world somewhat nearer to the heart's desire. We set before you as our contribution to this Conference the vision of an America in which there shall be no single family without the income which is essential for the maintenance of health.

The Provincial Board of Health of Ontario

Cases and Deaths from Communicable Diseases reported by Local Boards of Health for the Month of November, 1919.

COMPARATIVE TABLE.

	Nov. 1919.		Nov. 1918.	
Diseases.	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*
Smallpox	1128	0	6	0
Scarlet Fever	438	7	157	9
Diphtheria	621	48	167	30
Measles	412	2	68	8
Whooping Cough	127	7	60	23
Typhoid Fever	53	24	46	13
Tuberculosis	157	124	159	124
Infantile Paralysis	2	0	1	0
Cerebo-spinal Meningitis	11	8	8	5
Influenza	16	9	.....	.....
Acute Influenzal Pneumonia	.....	3	.....	.....
Acute Primary Pneumonia	.....	162	.....	.....
Relap. Fever and Dysentry	.....	1	.....	.....
	2965	395	672	212

NOTE.—Cases and deaths of the last four diseases were not reported in 1918.

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH.

	Cases. Nov. 1919.	*Cases.* Nov. 1918.
Syphilis	100	17
Gonorrhoea	171	73
Chancroid	4	4
	275	96

SMALLPOX CASES REPORTED FOR THE MONTH OF NOVEMBER, 1919.

County.	*Municipality.*	*Cases.*
Algoma	Espanola	13
	Blind River	1
Brant	Brantford	3
Bruce	Teeswater	1
Elgin	Dutton	1
	Dunwich	17
Halton	Trafalgar	2
	Georgetown	1
Hastings	Hungerford	4
	Belleville	1
	Deseronto	1
Huron	Wingham	1
Kent	Chatham	2
	Harwich	4
Lambton	Walpole Island	1
Leeds and Grenville	Prescott	1
Lennox and Addington	Camden	1
Lincoln	St. Catharines	4
Middlesex	London	1
Nipissing	North Bay	4
Northd. and Durham	Darlington	4
	Brighton Township	14
	Brighton Village	1
	Murray Township	1
Ontario	Oshawa	6
	Uxbridge Town	1
	East Whitby	5
	Uxbridge Township	2
	Brock	3
Oxford	Woodstock	21
	West Oxford	1
	East Oxford	2
	East Zorra	1
	West Zorra	7
Parry Sound	Burks Falls	15
	Proudfoot	1
	Armour	1
	Parry Sound Town	1

Peel	Albion	1
	Streetsville	1
Perth	Stratford	19
	Hibbert	4
Peterboro	Peterboro	9
	Lakefield	2
Simcoe	Orillia Town	4
	Orillia Hospital	35
	Midland	2
Stormont D. & G.	Matilda	1
Sudbury	Sudbury	10
	Mattawa	6
	Martland	1
Temiskaming	Hearst	2
	Kreugerdorf	9
	Timmins	1
	Evanturel	1
Victoria	Eldon	1
	Bexley	1
Waterloo	Kitchener	1
Welland	Niagara Falls	1
	Chippawa	1
Wentworth	Hamilton	3
	Barton Township	1
York	Toronto	811
	Markham	3
	Stouffville	19
	Woodbridge	16
	Whitchurch	7
	East Gwillimbury	1
	Etobicoke Township	1
	Weston	2
		1,128

The chief incident in the monthly report of communicable diseases is the marked outbreak of smallpox which at present is found more or less epidemic in 30 counties of Ontario. The chief centre is the city of Toronto, where the disease has existed since the spring of this year, being in some cases erroneously diagnosed as chickenpox. Many of the outbreaks in the various parts of Ontario are traceable to Toronto where the report of the last few days indi-

cate that the epidemic is not yet suppressed, although some 200,000 persons, according to the report of the Medical Officer of Health have been vaccinated.

The failure of the city authorities to carry out the law in respect to compulsory vaccination and the fear of the disease spreading to the United States has led the authorities of the latter country to establish quarantine regulations at the border and to require persons travelling to the States to show evidence of recent vaccination.

This requirement has already proven to be a serious inconvenience to many travellers and a detriment to trade, and has given the city of Toronto a bad name all over the United States. Toronto will be fortunate if the neglect of its Board of Health and Council in fulfilling the vaccination law does not invite damage suits on behalf of outside points which have suffered on account of this neglect.

The disease, except in a minority of cases, is fairily mild, but its mildness is no guarantee that it may not at any moment become severe. So far this year there have been seven deaths from smallpox in Ontario.

The scientific world acknowledges the wonderful protection provided by vaccination in this disease, and it is comforting to know that the great mass of our population is quietly being vaccinated. This is particularly true of the foreign population of the city of Toronto, who doubtless have learned the value of this protection before they reached our shores. The Board has during the month of November supplied gratuitously to the public about 240,000 individual doses of smallpox vaccine. Every order up to the present has been filled and the Connaught Laboratories, the source of supply for most of our *free biological products*, has met the unprecedented demand in a manner which commands the admiration of the public.

From some quarters enquiry has been made as to why the Board has not replied to the arguments and advertisements presented in the sporadic campaign of the anti-vaccinationists. The answer is apparent. In the first place the antis have presented no argument worthy of the name, and in the second place the persons indulging in this pasttime are so obviously ill-informed upon the subject that the Board considers that the public is quite able to judge fairly in the matter and that consequently the movement is unworthy of further official notice.

Communicable Diseases.

Communicable diseases of the commoner varieties present an enormous increase over those of the corresponding month last year. This is particularly true of scarlet fever, diphtheria, measles and whooping cough. The death rate from those affections it is gratifying to note is low, that of scarlet fever being less than 2 per cent., diphtheria 7.7 per cent., measles .5 per cent. and whooping cough 5 per cent.

Pneumonia.

This is the season of the year for acute primary pneumonia, from which there were 162 deaths during the month. Fortunately we have been spared the experience the country suffered from influenza last year, and it is sincerely hoped this affection may not reappear.

Cornwall, Ont., 6th Dec., 1919.

Dr. J. W. S. McCullough,
Chief Officer of Health,
Toronto.

Dear Sir:—

Yesterday I had a visit from Dr. Peter McLaughlin, and he gave me further details concerning the outbreak of smallpox in Winchester township, and as I thought it might be of some use as a matter of reference just now I send in the following report:

In September a young man of Winchester township developed a suspicious rash which was diagnosed by the attending physician as smallpox. This diagnosis was confirmed by Dr. McLaughlin the M. O. H. However, another firm of physicians at Chesterville, who are very well known and held in the highest repute, considered that it was a case of chickenpox, apparently owing to the mild symptoms. I was called in to decide the matter, and ordered rigid quarantine, as it was to me a clear case of smallpox. We had a great deal of difficulty in the neighborhood owing to the difference of opinion among the medical men. The balance of the family, consisting of a father, mother and young sister, absolutely refused to be vaccinated. Just before quarantine was established this young man slept at a neighboring farmhouse with another young boy of about the same age. In about ten days this second young man went

down with a virulent case of confluent smallpox. The father, mother, and one son submitted to vaccination in this family. One daughter refused. The patient died of the disease in six days. The father, mother and son escaped entirely, while the daughter who refused vaccination took the disease in a virulent form, and while she did not die she remains very badly pox-marked.

In the family of the first case the mother and daughter both contracted the disease and the mother died from it, and the daughter is very badly pox-marked. A neighboring family who had all been vaccinated took what was called chickenpox, but I am convinced they had smallpox as the first case frequently stopped at this house before he was quarantined, and the mildness of the attack was no doubt owing to the fact of their having been vaccinated.

Yours truly,

(Sgd.) P. J. MOLONEY,
District Officer of Health.

News Items

A meeting of the Board of Directors of the Canadian National Council for Combatting Venereal Diseases was held in the office of the Council, 154 Bay Street, Toronto, on December 22nd last. A large amount of routine work was disposed of. The appointment of Dr. Gordon Bates, of Toronto, as General Secretary, was confirmed. A general plan of campaign was agreed upon and a plan looking to the co-ordination of the work of the Canadian Council, the Provincial Councils and local organizations was considered and a special committee to arrange details was appointed.

Dr. O. C. J. Withrow, who for some time past has been delivering lectures on Social Hygiene in various parts of Canada and the United States, has returned to Toronto and resumed private practice.

Dr. A. K. Haywood, Medical Superintendent of the Montreal General Hospital, has been appointed chairman of a committee of the Canadian National Council for Combatting Venereal Diseases, to interest and enlighten physicians throughout Canada on the venereal disease question in Canada and the plan of the Dominion Government.

The smallpox situation in Toronto continues to attract a great deal of interest. The total number of cases reported up to December 20th was over 1,600. Compulsory general vaccination had not been ordered when this issue of the JOURNAL went to press. The first death from smallpox was reported in Toronto on December 23rd.

A very considerable increase in the number of cases of smallpox elsewhere in the Province of Ontario, is reported. Quarantine against unvaccinated persons, proceeding from Toronto has been enforced by the United States and the Provinces of Quebec and Manitoba. It is still possible for such persons to proceed in the direction of the North Pole and not be molested.

Dr. John A. Amoyt, C.M.G., Deputy Minister of Health, Department of Health, Canada, has been in Halifax in connection with the work of the Federal Department.

The library of the late Dr. F. E. Wesbrook, formerly President of the University of British Columbia, comprising a great number of valuable pamphlets, reprints, bound volumes, etc., is for sale. The library is quite unique in the content of valuable material from the public health standpoint. Further information in reference to the matter may be had from Dr. R. H. Mullin, Director of Laboratories, Vancouver General Hospital, Vancouver, B.C.

Dr. Gordon Bates, General Secretary of the Canadian National Council for Combatting Venereal Diseases, visited Regina and Winnipeg during December, and delivered a number of addresses on the subject of methods of control of venereal diseases.

Correspondence

The Value of Vaccination

The following letter in reference to the smallpox situation in Toronto appeared in several Toronto papers on December 17th:

Sir,—It seems that most of the knowledge which many of Toronto's citizens possess of smallpox and vaccination against it is gleaned from the unproved and frequently untrue assertions and paid advertisements of irresponsible persons. A typical and prominent representative of this class is a gentleman who in a recent full-page anti-vaccination display euphoniously proclaims himself a "vocational adviser and character analyst." It would also seem to be not out of order for one to enquire as to just when it became desirable for the public to accept leadership in purely scientific matters from individuals who obviously have neither the qualifications of scientific training nor of scientific knowledge.

Toronto's Position.

The facts of the Toronto situation are these: Toronto is in the midst of an epidemic of smallpox which may at any time assume a very virulent character—statements of those who know nothing of the history of epidemic to the contrary notwithstanding. Many Toronto citizens have already suffered great inconvenience and the financial loss resulting from the epidemic so far has been considerable.

While smallpox is a distinct menace to the lives of Toronto citizens, the tale does not end there. The situation has become so bad that Toronto now constitutes a focus which in the absence of vigorous action may well result in the spread of the disease all over the continent. That outsiders are alarmed is amply proven by the fact that a quarantine against Toronto has been established by the United States Government and certain large cities in Canada. Aside from the public health aspect of the question, the effect which this will have on travel and trade at this time is sufficiently obvious.

Would Stamp Out Germ.

This serious condition of affairs is entirely due to the fact that in Toronto a large percentage of the population is still unvaccinated,

although wholesale vaccination would stamp out the epidemic immediately. Such action has not been taken because of the misguided activities and ignorant prejudices of a small group of noisy zealots.

Under the Rockefeller Foundation there was established in the United States a few years ago a philanthropy known as the International Health Board, which has initiated and carried out most valuable work in the field of preventive medicine, particularly against malaria, yellow fever and hookworm disease. The director for the Eastern Hemisphere of this foundation is Dr. Victor G. Heiser, New York, whose standing is on a par with that of General Wm. C. Gorgas, who was responsible for the magnificent public health work carried out on the Isthmus of Panama.

Unquestionable Authority.

In answer to an inquiry, Dr. Heiser has written as follows in regard to the efficacy of vaccination against smallpox by the use of cowpox virus:

"Your letter of December 5 in regard to my vaccination experience in the Philippines has just reached me. I do not recall just what particular stories of the Philippines I inflicted upon you, and would suggest that if you would like to have authenticated records, you write to the Surgeon-General of the Public Health Service for Bulletin No. 57, entitled 'Smallpox and Vaccination in the Philippine Islands,' by Victor G. Heiser and Oleson.

"As you may desire to have some information for immediate use, perhaps a few brief statements may be of value. There were approximately ten million vaccinations made in the Philippines without loss of life or of limb. Foreigners who were unvaccinated almost invariably contracted smallpox. I recall especially that several anti-vaccinationists who declined vaccination died of the disease within a short period after their arrival in the islands.

Saves 30,000 Lives.

"Six provinces near Manila which have an approximate population of one million for many years had an annual mortality from smallpox of 6,000 persons. After vaccination was completed no further deaths occurred among the vaccinated. This in a period of five years resulted in a saving of 30,000 lives.

"During the summer of 1918 some 700 deaths from smallpox have been reported in the city of Manila. In view of the fact that

Manila was thoroughly vaccinated, it might appear at first sight that this was evidence of failure of the efficacy of vaccination. On examination it was found that practically all of those deaths occurred among children who had been born since the systematic vaccination was completed, and who had not received the benefits of that operation.

"The records of the Philippines show that prior to vaccination there was an annual death rate from smallpox of approximately 40,000. Upon the completion of the ten million vaccinations referred to above this death rate was reduced to a few hundred, and these death occurred almost entirely among persons who were unvaccinated.

"The story Dr. Heiser originally told me as to the result of vaccination in the Philippines in the case of certain islands was even more remarkable than is indicated in the summary he has given above. I will endeavour to procure further information from the Surgeon-General of the United States Public Health Service as to this, and hope to forward it to you later."

Toronto Should Act.

Meanwhile may I point out that in coming to a conclusion on such an important subject as this, one should rely only on well authenticated facts and statements by persons, such as Dr. Heiser, whose scientific reputation is absolutely above reproach and who are really able to support their assertions.

If calamitous results ensue from the Toronto epidemic, it will do us little good to bewail our fate and call down maledictions on the heads of our self-styled prophets. We should realize now that the main result of these gentlemen's activities at present is only to impede the life-saving machinery of capable health authorities and to obtain free advertisement at the expense of gullible citizens.

Meanwhile, Mr. Editor, it would seem that our city fathers are being led by the nose. Surely it is high time for Toronto to act and to act quickly.

Gordon Bates.

Editorial

Anti-Vaccination Hysteria

THE desirability or wisdom of adopting any measures calculated to reduce the incidence of preventable sickness should at all times be considered a subject suitable for reasonable discussion.

Reasonable discussion should have the merit of enlightening those whose knowledge of the subject under discussion is limited. This implies that a reasonable amount of information of a thoroughly reliable character shall be in the possession of those who engage in the controversy. And, finally, it is of course to be expected in such a discussion since it has to do with the welfare of mankind, that truth, honesty, frankness and good humour will characterize the spoken utterances or written statements of those engaging in the discussion.

The present epidemic outbreak of smallpox in Toronto has proven to be the opportunity for certain persons whose ideas of scientific discussion, are diametrically opposed in every particular to those enunciated above, to drag such a discussion into the mire.

As an example of gross, crude, unscientific and untruthful methods, the full-page paid advertisement which appeared in two evening newspapers published in Toronto on November 27th last, and in several issues of the Sunday edition of a morning newspaper, may well be regarded as the last word in hysterical outbursts. The advertisement in question was entitled "Vaccination Condemned."

In large caps the following statement was made, "The evidence accumulates, and the rush for little caskets is convincing the public that vaccination is responsible!" And this is the Twentieth Century, and the place is Toronto!

When immigrants from certain backward countries endeavour to enter a country which maintains an adequate public health service the immigrants are required to be examined by an officer of the Public Health Service in the country to which admission is desired. A Mexican endeavouring to enter the United States is so examined. Unvaccinated citizens of Toronto are at the present

time similarly dealt with. The liberty of the subject in that country is subservient to the best interests of the whole community.

It may be that some of the readers of the JOURNAL are not as fully informed as they would like to be in regard to the question of vaccination against smallpox. For such the article in the last edition (11th) of the Encyclopaedia Britannica, Volume 27, can be recommended; for others already somewhat informed, the Reports of the British Royal Commission on Vaccination, 1896, or the article on Smallpox and Vaccination in Rosenau "Preventive Medicine and Hygiene," will be found of value.

Book Review

"Milk," by Paul H. Heinman (W. B. Saunders Company, Philadelphia and London), a book of some 700 pages, is a most comprehensive survey of the subject. The opening chapter on the History of Milk is as interesting a chapter as I have ever read on this subject. For the past nine years we have had control of the milk supply of Toronto, during which time we have constantly battled for sanitary conditions on the 3,000 odd dairy farms which supply Toronto with milk. It was, therefore, something of a shock to learn that over one hundred years ago in England and Scotland there were dairies which carried out the sanitary measures which we thought very modern and up-to-date. These dairies had separate rooms for butter making, for cheese making and for washing and cleaning utensils, and the attempt was made to keep milk chilled to 50 degrees Fahrenheit.

A certain William Harvey, who kept a sanitary dairy at that time in Glacgow, recognized the importance of methods which we are doing our utmost to induce Ontario farmers to adopt at the present time. His stables were large, well aired, well lighted and clean, and the best utensils obtainable at the time were employed; dry fodder was given only after milking, and accurate records were kept of each cow to ascertain her productiveness, while manure was promptly removed from the stables and spread on the farm as fertilizer.

We would strongly urge the new U. F. O. Cabinet to advocate the measures adopted by Mr. William Harvey on the Ontario farms of to-day, and predict that if cow testing alone were systematically carried out for five years, and boarder cows replaced with real milk producers, the dairy industry would become established on a sound business-like basis which would survive irrespective of hard times. Unfortunately, in the case of Harvey, the enterprise failed during the financial depression which followed the Napoleonic war. "Milk," unfortunately then as now was "milk" to the uneducated consumer, and Harvey's whole milk could not compete with the watered product in general use.

The chapters on the Physiology of Lactation, the Physical and Chemical Characteristics of Milk, Milk Testing, Micro Organisms in Milk, Milk Enzymes, Fermented Milks, Laboratory Examination of Milk, Milk Borne Infections, the Handling and Control of Milk

Supplies, are excellent and would prove of interest both to Medical Officers of Health, Laboratory workers and Sanitarians, as well as men in the trade. The chapter on the Economic Aspect of Milk Production is worth the price of the book to any dairyman or farmer, and will bear careful study by those interested in this business. It is regretable that the chapter on Milk and Its Relation to Infant Feeding, by Doctors Abt and Levinson, of Chicago, does not include the recent and extremely important work of MacCallum on Growth Materials, though otherwise it is quite comprehensive.

The book is extremely well illustrated and contains numerous carefully compiled tables and a very complete bibliography.

GEORGE G. NASMITH.

The Public Health Journal

VOL. XI FEBRUARY, 1920 No. 2

Child Health*

BY ALAN BROWN, M.B.,
Physician-in-Chief, Hospital for Sick Children, Toronto.

OUR Nation has been shaken to its foundations by the earthquake concussion of the Great War. The huge task remaining before us, is that of reconstruction, of weaving into practical daily life that vision of democracy for which the boys in khaki left all and followed their symbol of democracy.

It is for us, the stay at homes, to be dedicated anew to the unfinished work of these who fought on the battlefields of Europe. It is for us, here, highly to resolve that for every life given on these fields, for every body warped or maimed, a thousand young lives shall be raised into fuller freedom and health on this side of the ocean; that for every life sacrificed a thousand children shall have straighter, stronger, freer bodies, and straighter, stronger, freer spirits. This should be our living memorial to the men who died in the cause of democracy.

It has been truly said, that it is often far easier to die for an ideal than to live for an ideal. The work of reconstruction which now confronts us is bereft of many of the striking and dramatic features which enabled the spirit of war to sweep the emotions of the crowd into a greater surge of enthusiasm. There are no fanfares of trumpets, no waving flags and no cheering crowds to greet and urge on the workers in the cause of reconstruction. It is often far easier to fight one's enemies than to work with one's friends. This work demands virtues other than those of the battlefield; not physical courage and endurance, but that spiritual courage and endurance which will painstakingly study the needs of a community, and then patiently and quietly and tactfully, day after day point out to that community its shortcomings, until first

*Read before London Child Welfare Association, June, 1919.

one and then another sees the light and becomes eager to support, with time and energy and money, the movement for child health. It is a work which appeals powerfully to the thoughtful women of the country.

Lives are being needlessly sacrificed, human power in enormous quantity is left wholly or partially undeveloped, economic loss in staggering extent occurs, because scientific knowledge and practical wisdom are not applied to the prevention of needless weakness and diseases, and for the constructive development of the potential health resources of the children of our country. We are at last beginning to suspect, if not fully to realize, that even non-essential and fundamental to the integrity and permanence of a nation than progress in science, politics, industry and art, are biologic soundness, and fitness, the health of the people. This national asset, health, while the most essential, is at the present time the most endangered of all our natural resources. The mothers of this country are beginning to demand that the health, the biologic soundness and welfare of the children, shall no longer be neglected, that existing defects shall be recognized and cured whenever possible. That all available forces shall be mobilized to prevent diseases which may be avoided with intelligent and organized effort. They are demanding that in the future wisdom shall be practically applied to the conservation and development of the most vital of all our nation's resources, the health of the people, and, most of all, the health of the children and youth.

The children of our country deserve as effective physical care as the live stock. The children are entitled to as careful attention and cultivation as the crops. Shall not the children, drafted by compulsory education into our schools, be assured as skilful and satisfactory care as were the soldiers in camp and trench.

Our schools are wasting enormous sums of money in educating or trying to educate the children who are handicapped by ill health, when the expenditure of much smaller amounts in a judicious health programme would produce an extraordinary saving in economy and efficiency. A dollar spent promptly in a timely, constructive effort to conserve a child's health will be more fruitful for the child and for human society than will a thousand dollars applied twenty years later. The principle of national thrift finds its first and most vital application in the conservation and improvement of the health of the children.

Unfortunately, in Canada, we have no Federal Department of Health at present, so that figures are unobtainable for the entire

Dominion except for a few localities. Furthermore, I shall not burden you with local statistics for Toronto, but shall refer to figures presented as a result of the children's year campaign held in the United States. These figures I obtained while attending the International Child Welfare Congress in Washington last month. From my knowledge of Child Welfare Work, I feel that these figures might easily apply to our own country in a very much reduced number. It was found that as a result of this year's campaign that at least 1 per cent., 200,000 of the 20,000,000 school children are mentally defective.

Over 1 per cent.—250,000 at least of the children are handicapped by organic heart disease.

At least 5 per cent.—1,000,000—have now or have had tuberculosis, a danger often to others as well as to themselves.

5 per cent.—1,000,000—have defective hearing, which unrecognized gives many the undeserved reputation of being mentally defective.

25 per cent.—5,000,000—of the children have defective eyes. Surely it is more humane and economical to have the pupils' eyes tested and eye-glasses produced than to leave children handicapped and backward. Yet a majority of these children have received no attention.

About 25 per cent.—5,000,000—are suffering from under nourishment, and poverty is not the most important cause of this serious barrier to health development.

From 15 to 25 per cent., 3 to 5 million, have adenoids, diseased tonsils or other glandular defects. Adenoids and diseased tonsils make backward pupils, and interfere with the child's general development and health.

From 10 to 20 per cent, two million to four million, have weak foot arches, weak spines, or other joint defects.

From 50 to 75 per cent., ten to fifteen million, have defective teeth, and defective teeth are more or less injurious to health, some of these defective teeth are a deadly menace to their owners.

Seventy-five per cent., 15 million have physical defects which are potentially or actually detrimental to health. Most of these defects can be remedied.

The business of keeping the children of our country in good physical repair is a disgrace to the Dominion. The great majority of people, even the intelligent people, fail to appreciate the significance of these defects. Their ignorance does not prevent the penalty of injury from falling relentlessly upon the young lives.

One of the most appalling revelations of recent years is the fact that the rural children in this country are on the average less healthy, and are handicapped by more physical defects than the children of the cities, including all the children of the slums. The chief reason for the physical inferiority of country children seems to be that city children now receive in a great many instances more health care than do those in rural regions. In the past most of our best human material for leadership in city and country has come from the farms. In the future, the raw material to supply the needs of civilization, including the best human supply, must continue to come from the soil. If rural Canada is to continue to be a satisfactory nursery for human life for the Dominion, it must provide conditions favourable for the cultivation of the best possible human material.

The ideal health programme which lies before every community is a complex one, involving the co-operation of parents and teachers with school physicians, Child Welfare nurses, and physicians and all other authorities relegated to this important branch of work. The amount of work which needs to be done in every community may well seem discouraging. There is, however, no need for discouragement if there are in that community but two or three earnest workers, who will take upon themselves the task of setting the ball rolling.

There should be in every community a permanent group of people whose main object is the protection and development of Child Welfare and especially of Child Health. The routine which lies at the very foundation of all effective health work is a very prosaic business, necessitating conscientious day by day attention to innumerable details which can be slighted all too easily. The workers engaged in this basic work need the inspiration and the stimulus which comes through the knowledge that their work is being watched and fully appreciated by the best people of the community. In a democracy it is only through the unflagging interest of such a permanent committee that we can hope to counteract our usual indifferences to matters which seem to be the business of nobody in particular. A committee of this kind should consist of representative physicians, delegates from Women's Clubs, Churches, Settlement and other Civic Organizations interested in Child Health.

The personnel is all important. It is a temptation to appoint people who are prominent in society, or who are liberal donators to this or that good movement. Such inert committees are merely stumbling blocks in the path of progress. A few honest people

with common sense and energy and an absorbing determination that the children of their country shall have the best possible start in life can always be found. Although they may in some cases be unlettered and of humble origin, the committee of which they are a part will be a living force in the country and not merely a figurehead.

Socrates—In his wisdom wrote, "In every work the beginning is the most important part, especially in dealing with anything young and tender."

Some Problems of Child Hygiene

DR. MARY SHERWOOD,
Director Child Hygiene, City of Baltimore.

Statement of General Situation

WHEN the history of social effort and social legislation of the nineteenth century is written, one of its most interesting chapters will be that devoted to child welfare. It will be one of the late chapters in the last volume of the series, for the "Century of the Child" was long in coming. Those who have followed this history with eager interest have noted the gradual growth of public attention to this vital question and its various phases. Institutions for foundlings and their tragic failure to rear their inmates, the mortality in some instances rising to 100%; milk stations and the gradual development of the idea that larger returns are obtained by teaching mothers to care for milk and to modify it in the home; the fundamental importance of birth registration to infant saving; welfare clinics for well babies; pre-natal clinics; finally maternity clinics—the progress has been like that of a crab, backward. And the end of the path has not been reached, for there are serious questions regarding fit matings and grandparents still claiming the attention of the eugenists.

The present trend of effort in child welfare is toward a centralization of all agencies. Social and sporadic measures tend to merge and there is a constant and encouraging increase in the number of city and Provincial Bureaus of Child Hygiene. Even national governments have begun to do their part in this tremendous field of conservation.

It is predicted that a great impulse will be given to the crusade against infant mortality by the war, that the late orgy of destruction will be followed by a fury of conservation. Surely a nation in which 40% of the youth examined for the army were found unfit, as was the case in the United States, might well set itself anew to the task of correcting the remedial defects of young children, and this not necessarily by way of preparation for future wars.

Facts of Infant Mortality.—Possibly no other one factor has been of such great importance in placing the situation with reference to infant mortality in the United States plainly before us,

as the growth of the area where vital statistics may be accepted as standard. Up to a recent period adequate records were kept in very few states. Babies were born and not enumerated; they died and went not whither so far as official registration was concerned. Recording and studying births, deaths and causes of death has greatly stimulated life-saving measures. May I illustrate this point by reference to Baltimore, a city of more than half a million inhabitants, whose conditions are probably typical of those in any large city in the country.

In the year 1917, according to a study made recently by Dr. Wm. T. Howard, Assistant Health Commissioner, 21.55% of the total deaths were in children under 5 year of age and 15.69% were of children under 1 year. Of the deaths in the first year of life the causes were as follows:

Congenital debility and premature birth	24.30%	of	the deaths
Other diseases peculiar to infancy	8.00%	"	"
Congenital malformation	7.12%	"	"
Congenital syphilis	2.75%	"	"

In the first and second year of life approximately 30% of the deaths were due to diarrhœa and enteritis. In the first year 18.6%, and in the second 33.34% of the deaths were due to pneumonia.

It was estimated that of the 15,000 deliveries in Baltimore annually at least 2,500 (1-6) of the mothers were unable to obtain or did not obtain efficient obstetrical care.

In a recent report of the Children's Bureau of the United States Department of Labour, Pub. No. 34, the facts of Maternity Care and the Welfare of Young Children in a Homesteading County in Montana are set forth. The account is an intensely interesting and graphic statement of the hazards to mothers and children in a remote rural community—typical of many others in the United States and Canada. It emphasizes the need for care of mothers in confinement and shows the difficulties which present themselves to those who would extent protection to these mothers and children. These isolated homes, often situated at a great distance from a physician or a hospital, present a very peculiar problem whose solution, though not impossible, will be extremely difficult. Such studies form the only intelligent basis for action and enable us to use effort where it is needed and to remove causes rather than to attempt to cure results of negligence.

Interest of Mother and Child Cannot be Divorced.—It cannot be too often nor too insistently pointed out that the interest of the mother and the child are bound up together and cannot be divorced

without harm to the child. A brilliant writer on this theme, Miss Anna Martin, in a recent article in the *Nineteenth Century Review* on "The Irresponsibility of the Father," says that though authority has at last formally recognized that the welfare of infants depends in very large measure on that of their mothers; there is no sign that any effort has been made to grasp the realities of the mother's life and one would almost surmise a distinct reluctance to face unpleasant facts." She says, "Broadly speaking babies die and children pine because no one is responsible for providing them with the necessaries of life. They suffer, not from their mother's lack of love and knowledge but from the lack of pence."

The relation of economic conditions to infant welfare has been the subject of some careful studies of the Children's Bureau of the U. S. Department of Labour in which it has been shown that the wage of the father as well as the industrial employment of the mother has an important bearing upon the life and health of the children.

Care in Confinement.—Another important factor contributing to a high rate of maternal and infant mortality is found in the conditions of childbirth. Society has never sufficiently safeguarded the mother and child by surrounding them with skilled care at this period. Dr. Grace L. Meigs, in one of the studies of the Children's Bureau on Maternal Mortality, from all causes connected with childbirth in the United States estimates that in 1913 at least 15,000 women died from conditions caused by child-birth, and that the majority of these deaths occurred from causes that are to a great extent preventable or curable. Moreover, the death rate from puerperal fever for the registration area in the United States is apparently not falling to any great extent, although the preceding decade saw a steady reduction in the death rate from certain preventable diseases such as typhoid, diphtheria and tuberculosis.

Syphilis.—In addition to the facts brought out by these studies of the last decade which have shown the relation of infant mortality and child welfare to the economic condition of the parents, and which have demonstrated the failure of society to render child-bearing as safe for all mothers as modern scientific methods are able to make it, a third important factor demands attention. Dr. J. Whitridge Williams, in a study of the causes of foetal deaths occurring in the obsterical department of the Johns Hopkins Hospital, found that syphilis is by far the most common etiological factor concerned, presenting an incidence of 26.4%, or 186 cases out of 705. It is evident that the vital risks in child-birth are not the only seri-

ous dangers the mother faces in the discharge of her function in race propagation. While accurate knowledge of the incidence of venereal disease in the civil population has not hitherto been available and frequency of infection of women in the martial relation is unknown—the surprisingly high percentage of syphilis and gonorrhœa found among men in the draft has made the problem of venereal disease a public health problem of primary importance in the United States.

A governmental programme has been inaugurated, the individual states co-operating, which is certain to have far-reaching consequences. Is it not, however, a sad commentary on our civilization that the problem was ultimately faced and the campaign inaugurated not because of the fact that the venereal diseases are the greatest foe to the efficiency of man as a father, but because they were proved to be the greatest foe to the efficiency of man as a fighter. Women and children, however, will benefit by the post-war methods of checking this scourge. Any efficient plan for child saving must include provision for testing the blood of the mother early in the pre-natal period and using necessary remedies if syphilis is present.

Programme.—Other factors bearing upon infant welfare might be enumerated. All reforms are lesson in patience. The remote programme will await the results of the slow-moving forces which bring changes and betterments in social and economic conditions. The problem of infant mortality has come to stay until its complete solution is found; its full solution will never be found until mothers and prospective mothers and potential mothers are made a real part of the body politic and win the place and wield the power of those who help make laws and shape educational and social policies. Our best teachers and leaders in this subject tell us that conditions in obstetrics in the United States will not be changed until women themselves demand a change and before they make an insistent demand much educational work must be done among them. In the meantime the immediate programme is fairly well worked out. The child, which is our chief concern, is an entity from the time of conception. From this time its care deserves the application of sound social methods. Jacobi says, "The baby's life and pathology begin nine months before birth." Its first period of existence, the pre-natal life, must be safeguarded, its birth should be skilfully conducted and its important first year should be constantly supervised.

Better Teaching of Pediatrics and Obstetrics.—One of the first requisites is that the graduates of our medical schools should be better prepared to practice pediatrics and obstetrics. I well remember at the International Conference on Infant Mortality in Berlin in 1911 asking Dr. Medin, of Stockholm, why it was that the infant death rate in Sweeden was so markedly lower than in many other countries. He answered that for thirty years pediatrics had been made a requirement for all medical students in Sweden and that the careful training required in this branch had been followed by material reduction in the morbidity and mortality of infants and young children. Similar results could be secured in any country. Raising the standards for entrance to the medical schools in the United States has already resulted in improvement in medical education, and will undoubtedly affect in time the morbidity and mortality statistics of infants. Better teaching of pediatrics implies, too, the encouragement of research in this field. Schools well equipped for teaching must be equally well equipped to search for knowledge which may be applied by medical and social methods. Large endowments should be forthcoming devoted purely to this purpose. In this connection it may be of interest to note the recent announcement of a gift of $400,000 by an unknown donor for the erection of a building for a woman's clinic at the Johns Hopkins Hospital. This clinic will not only furnish complete facilities for the most modern treatment of diseases peculiar to women and for the adequate care of women in childbirth, but it will undoubtedly make ample provision for scientific research into problems bearing upon all phases of the reproductive life of women.

Education for Motherhood.—The necessity for continued and well supported research in every field of medical and social science which promises assistance in the solution of the varied problems of child welfare has been referred to. Upon demonstrated facts must be based the most important and fundamental part of our entire programme, that is, education, general and special. The facts of organic reproduction and their bearing upon human welfare must be incorporated in our school curricula. The manner and method of instruction must be left to the pedagogues, the content of such instruction must be supplied by the medical and social science. We must make sure that it shall no longer be possible for any individual to pass through the period of school life, through college and university it may be, without anywhere along the way receiving at least some instruction as to the biological processes involved in parenthood and acquiring some knowledge of the

social hygiene involved in the institutions of marriage and the home. It may be suggested to the educators that however they may work out their programme of instruction, experience has shown that so far as what may be termed the "Craft of Motherhood" is concerned, it must be taught as near the period of its practical application as possible. Continuation schools and special classes for prospective mothers must be part of the educational programme. In the meantime, in addition to any school programme of instruction a continued and intensive educational propaganda must be kept up among adult men and women as to the essentials of efficient parenthood and efficient homes; as to the legislative and administrative measures necessary to secure these ends. In this connection I may call attention to a course of lectures just completed in Baltimore. At the request of a large group of women's organizations in Maryland made to the New School of Hygiene and Public Health of the Johns Hopkins University, a series of lectures on Motherhood by Dr. J. Whitridge Williams, Professor of Obstetrics of the Johns Hopkins Medical School were given during the months of April and May under the title, "Popular Lectures Upon Some of the Problems of Human Reproduction." The subjects of the five lectures of the course, all open to the public, were as follows:

1. The biological significance of reproduction. Statistical study of the birth and death rate, and their national significance.

2. Study of the reproductive cells; their bearing upon reproduction and heredity. Development of the embryo and its relation to the traditional views concerning maternal impressions and the production of monstrosities.

3. Changes in the maternal organism incident to pregnancy, which is not merely a local process. The mechanical problems of labor; its dangers. The control of pain.

4. The unnecessary wastage of infant life. Its avoidance by so-called pre-natal care.

5. Criminal abortion and birth control. The ethics of some of the problems of maternity.

The large audiences, mostly women, listened with eager attention, all apparently ready to receive the facts presented and grateful to have the subject dignified and presented in a scientific but proper manner. Already a movement has been started to secure similar courses throughout our country.

In at least one woman's college in the States, a foundation has been endowed for annual lectures on Motherhood and other colleges are offering courses on maternal and infant hygiene.

Baltimore's Bureau of Child Hygiene.—Reference has been made to the increasing number of Public Health Departments, state and municipal, which have organized special Bureaus of Child Hygiene. One of the newest of these is that recently added to the Department of Health of the City of Baltimore. Its organization is based on the study of vital statistics for the year 1917, already given, and it purposes primarily to follow up every baby born in Baltimore in the year 1919 through the first ten years of its life. The record card used, prepared for entries for ten years, was specially worked out by Prof. Raymond Pearl of the School of Hygiene and Public Health. Every baby is to be visited in its home promptly upon the report of its birth, and the facts of its history, its surroundings, family history, weight, height, etc., carefully noted. If there is need of medical, nursing or social care, it is referred to a physician, a clinic or an organization, which will give it the needed attention. At succeeding intervals throughout the first decade the facts of its development and health history will be recorded.

A welfare centre is being developed in a thickly settled section of the city where there are many coloured families and no hospital facilities. A woman obstetrician and several nurses will reside in the centre and conduct maternity and pre-natal clinics and an out-patient obsterical service. A welfare clinic for well babies and a pediatric clinic will be among the activities of the centre and visiting nurses will do intensive work in the surrounding area. This centre with its local work is an experiment to be modified and repeated in other parts of the city. It is hoped to establish day nurseries in different sections of the city at points where they are needed. The supervision of the Bureau will be extended to the day nurseries already existing, as well as to the various children's institutions and boarding homes.

After all is said the essentials of a comprehensive plan for baby-saving are few and simple and familiar to all persons who have followed social problems. Determination to carry out remedial measures and a constant reiteration of the facts are necessary. The whole argument is in the facts.

Financial Support.—Financial support of active measures may be either local, state or federal or all combined. If there is any legitimate expenditure of public funds, surely this is such, and has been only too long delayed. It is the right of mothers and children to share directly in the moneys spent for betterment of health; we need only state the simple fact, there is no room for argument.

Standards.—A stage has now been reached in the campaign for child welfare and the protection of maternity when workers may reasonably proceed to establish standards. In the recent international conference held in Washington by the invitation of the United States Department of Labour, Children's Bureau, a scheme for tentative standards was presented and adopted. I hold in my hand a copy of the proposed measures, etc.

Child's Bureau.—In the United States we take great pride in the leadership and in the accomplishment of our Children's Bureau. Its publications with their recital of facts gaing by actual social research form most important documents of human history. Sufficient material is already in hand to serve as the basis for a comprehensive national plan of child saving. It would be impossible to estimate the far-reaching good effect of the Children's Year inaugurated and carried out under its direction. Aside from the consideration of individual babies saved in every part of the country, the whole movement constituted a campaign of education which was masterly in its conception and execution.

In closing, may I say that I accepted the cordial invitation of your chairman with pleasure, but with a certain degree of embarrassment. It would be carrying coals to Newcastle for one to come from the United States to Canada with suggestions as to methods of child saving. You have long "allured to brighter worlds and led the way"—we can only follow. Our first organized national work began only in 1909, when, at a Conference on the Prevention of Infant Mortality called by the Academy of Medicine at New Haven the American Association for Study and Prevention of Infant Mortality was formed. You have present practice for outstripping ours, you have past history, you almost have traditions to your credit. So I have carefully avoided suggestions and can only say that I feel highly honoured to have had an opportunity to make you a neighbourly call and to have, as it were, a friendly chat with you over the fence.

Antenatal Work and Stillbirths

BY J. G. GALLIE, B.A., M.B., *Toronto.*

IN carrying on the work of the Prenatal Clinic in connection with the Maternity Department at the Toronto General Hospital for the past few years, I have been more and more convinced that this careful supervision of the expectant mother from the earliest months of pregnancy up till the time of her confinement is not only of great value to the mother, but is also a safeguard for the life and health chances of the unborn child. It occurred to me that here was a subject which might be of interest to a body of health officers—the value of closer antenatal observation in the reduction of the stillbirth rate. Through the kindness of Mr. Mills, of the Public Health Department, I was able to get at, approximately, the ratio of still births to live births in this city, in this Province and in the Dominion. The statistics for a year are as follows:

	Live Births	Still Births.
Toronto	1,200	500
Ontario	65,000	2,500
Canada (estimated)	230,000	11,000

If one were to add to these figures the deaths among infants during the first week of life, the causes of which can usually be put down to prenatal conditions, and to accidents at birth, the total would be surprisingly large. Should these figures not strike us as serious, or should we simply put down this loss of life as an inevitable fact, something which we may expect, year after year? Would it not be wiser to enquire rather closely into this problem to see if a certain percentage of these babies might not have been saved? Might it not be possible to find that some of the causes which operate against the birth of a live child might be met and removed? Would it be surprising to find that a certain rather large percentage of these tragedies could be classed as *preventable?*

Of the causes which make for death of the unborn child, it seems probable that very many arise within the maternal organism, and are to be met only through the mother. A study of the stillbirths occurring at the Toronto General Hospital since 1914 has proved rather interesting in this respect. During this time

there occurred in private, semi-private and public wards about 200 stillbirths, of which only 146 had reliable histories. These have been classified as follows:

(1) *Conditions in the mother to which stillbirth could be attributed:*

Placenta Previa	16
Accidental Hemorrhage	7
Lobar Pneumonia	1
Occluded Os	1
Eclampsia	14
Pre-eclamptic Toxaemia	16
Syphilis	7
Total	62

Are any of these conditions preventable? Certainly, eclampsia is a preventable disease in about 85% of cases. Are any of these conditions recognizable in time to prevent disaster? I should certainly think that those 16 cases of toxaemia ought to be included in this lot. A certain percentage of the syphilitic cases likewise if put on appropriate treatment should have a better outcome. So that I think we can safely say that at least 25 of these 62 babies might have been saved.

(2) *Stillbirths in which there were no apparent abnormalities in the mother:*

Monstrosities	12
Macerated foetus for which no cause was found	8
Habitual death of foetus	2

We know of no way at present to prevent abnormalities in development of the foetus. But a certain number of the other class, where the foetus was found to be macerated, were the products of women of a very low state of health. Improvement in their hygenic surroundings and in their order of living might be expected to result in healthy offspring.

(3) *Stillbirths from others who were allowed to go beyond full term, with resultant dystocia due to disproportion between the size of the foetal head and the maternal pelvis* 12

These are practically all preventable.

(4) *A fourth group might include injuries to the child at birth, and accidents at confinement:*

Breech, Version and Extractions	12
Face and Brow	6
Forceps	14
Ruptured Uterus	2
Prolapsed Cord	6
Spontaneous delivery with basal hemorrhage	6
Total	46

Of this group of 46 stillbirths there is very little to say, except to draw attention once more to the fact that the operation of forceps, especially high forceps, is not one to be lightly considered. Second stage low forceps is usually a safe procedure and is quite justified under certain well defined conditions. High forceps is one of the most abused operations there is, and is usually accompanied by disastrous results for mother and child.

The interesting thing about this group is the fact that autopsies on six of these stillborn babies, in which cases there had been perfcetly normal labours, showed basal hemorrhage due to rupture of the tentorium. There was no fracture of the skull, no instrumental pressure. The tentorial laceration was apparently due to the moulding of the foetal head.

(5) *A fifth group is made up of the remainder of the stillbirths, due to other ill-defined causes* 7

As the causes of stillbirths in these cases are more or less obscure it would be unfair to assume that any of these might have been prevented.

Of the total number of 146 stillbirths, I think that we should conclude that 37 of them, or 25%, could have been prevented by close attention to the mother. As well know an authority as Dr. Clifton Edgar, of New York, in a recent analysis of 500 stillbirths estimated that at least 100 of them might have been prevented by more adequate prenatal care.

Of these 146 stillbirths of ours, only *six* of the mothers are known to have been under proper antenatal supervision. The fact that quite a large number of these patients were in semi-private wards shows that they at least could have afforded to pay for medical attention prior to confinement, whether or not they were inclined or sufficiently educated to ask for medical advice.

The New York Milk Commission recently started the experiment of carrying on prenatal work in connection with the other work of the milk stations. Comparing the supervised with the un-

supervised cases, they found a reduction in the number of deaths of infants under one month of 28%, and a reduction in the number of stillbirths of 25% in favour of the supervised cases.

Another interesting study is found in the examination of a stillbirth map of the city—of any city, I fancy. This map was prepared by Mr. Mills, of the Record office of the Public Health Department, and it shows for one year the locations of the stillbirths—521 black pins, and the deaths from premature births—237 yellow pins. The map is unfortunately on too small a scale for a large room, but you will be able to note that in certain areas the pins are very thickly dotted, in other areas they are more scattered, while other parts appear to be entirely free from black and yellow. The thickly dotted areas cover almost exactly the areas inhabited by the very poor and the foreign element of the population. The clear areas represent the parts where the mass of the populace are well to do, *viz.*, Rosedale and the St. George Street and Avenue Road Hill districts. Here is a very apparent predisposing cause of stillbirths—poverty and ignorance.

If now we can bring ourselves to assume that, say 20% of stillbirths are preventable, what is the solution of the question? The answer is, I think, very apparent from the foregoing figures. It means more adequate prenatal supervision. Amongst the poor this end can be attained by the establishment, in the cities and large towns, of antenatal centres conducted by the Public Health Department where visiting nurses can bring their charges to meet a competent doctor on one or two days in the week for medical examination and instruction in prenatal hygiene.

Amongst those people who are able to pay a reasonable fee for medical attention there should be attempted first of all a more widespread dissemination of knowledge as to the need of the expectant mother. Then, too, the sooner the practitioners of this country get over the idea that when they have booked their patient and made a vaginal examination and a urinalysis, they are through with her until labour commences, the safer it will be for mother and child. Frequent consultations—once a month at least; frequent urinalysis —every two weeks at least, a record of blood pressure, careful pelvimetry, the instruction of the patient as to her mode of life and to the significance of certain danger signals, greater care, greater watchfulness—these things will count more in the reduction of the stillbirth rate than manual dexterity and skill in the use of forceps.

Second Annual Meeting of the Child Welfare Section Canadian Public Health Association, Toronto, 1919

OPENING MEETING—MAY 27TH, 1919, 10A.M.

Meeting called to order by the Chairman, Dr. David T. Evans (Montreal). Secretary read minutes of the meeting in 1918. These approved and signed.

Secretary then read a report of current year's work and outlined certain policies for the ensuing year.

Discussion opened by Dr. Alan Brown, who urged that greater interest should be shown by the various committees of the Section.

These remarks were endorsed by Dr. Geo. Smith, of Toronto, who pointed out how the work might be popularized like that of Mental Hygiene. He advocated the co-operation of such groups as represented by the Rotary Club.

Mrs. Hannington (V. O. N.) then spoke of the great need for Public Health nurses. Not only in the Western Provinces, but also in the country parts of Ontario, many women had no skilled assistance at their confinement, and often no one to do even the house work.

She advocated preparation for motherhood by teaching mothercraft in the public schools, and by Little Mothers' Leagues.

Dr. J. H. Mullin (Hamilton) strongly urged that any man wishing to become a Pediatrist should first have a thorough grounding before posing as such and demanding a specialist's fee.

Dr. D. J. Evans (Montreal) then spoke on the great possibilities of child welfare work in Canada, and suggested the drawing up of a programme with certain objectives as the goal of activities. Sound statistics based on adequate birth registration was a pre-requisite of all such work.

Dr. Mullin suggested that only those members who were interested in work and willing to devote some time to it should be placed on the committees.

It was moved by Dr. Alan Brown and seconded by Dr. Smith that a nominating committee be appointed to revise the personnel of the committees. (Carried.)

The committee was then appointed with Dr. Alan Brown as chairman.

It was moved by Dr. Lindsay and seconded by Mrs. Kneil that two new committees be instituted, *viz.*, 1. on Heredity and Eugenics; 2. on Mothers. (Carried.)

Miss Dyke (Toronto) proposed having a *Child Welfare Council* backed by such bodies as the Rotary Clubs, and to deal with such matters as dependency, delinquency, health, education, etc.

Dr. Evans endorsed Miss Dyke's proposal and emphasized the importance of co-operation of physician and social worker in child welfare work.

With the establishment of a Federal Department of Health with a Child Welfare Bureau the work of the various Provinces would be co-ordinated and encouraged. But each Province had its own particular problems and difficulties which it must solve for itself *a Child Welfare Council* might be a great help in bringing various activities into proper perspective.

The meeting then adjourned.

TUESDAY AFTERNOON—MAY 27TH, 1919.

The General Session of the C. P. H. A. was devoted to Child Welfare, and the following addresses were given:

1. Dr. Mary Sherwood, Baltimore, Md., "Some Problems of Child Welfare."

2. Dr. Gordon Gallie, Toronto, "Still-births."

3. Dr. H. C. Jamieson, Edmonton, "Child Welfare Work in Alberta."

4. Dr. David Evans, Montreal, Chairman's Address.

Short discussions followed.

WEDNESDAY, A.M., MAY 28TH, 1919.

Special session of the committee on *Rural Communities*, Nursing and Social Work.

Miss Power, Chairman of the Committee, presided.

The following provinces and national organizations were requested to appoint representatives to discuss matters of interest to the committee:

Nova Scotia—Represented by Dr. W. H. Hattie.
New Brunswick—Hon. W. L. Roberts, M.D.
Ontario—Dr. J. W. S. McCullough.
Manitoba—Miss E. Russell, R.N.
Alberta—Dr. H. C. Jamieson.
Saskatchewan—Dr. F. C. Middleton.

British Columbia—Dr. H. E. Young.

Quebec—

Prince Edward Island—

Canadian National Nurses' Association—Miss Jean I. Gunn.

Canadian Red Cross Society—Mrs. Plumptre.

St. John Ambulance Association—Col. C. A. Hodgetts, Col. Birdwhistle.

St. John Ambulance Brigade—Mrs. Henderson, Dr. Chas. J. Copp.

Department of Soldiers' Civil Re-Establishment—Col. McKelvey Bell.

Victorian Order of Nurses—Mrs. Hannington.

Women's Institutes of Canada (Federation)—Mrs. Kneil.

Canadian Medical Association—

National Council of Women—

Each province showed marked progress in extending Public Health Work into outlying rural districts. The shortage of nurses seemed to be felt everywhere, though funds were often plentiful. Hospitals and health centres were being established, while the examining of school children is one of the chief duties of nurses touring a district.

Miss Jean Gunn, Canadian National Nurses' Association, spoke of the great shortage of nurses in Canada, largely owing to the war. She also advocated a Central Bureau of trained nurses, including voluntary assistants. This Association should be supported by public funds and have the power during a national calamity of detailing nurses to any work.

Mrs. Plumptre spoke of the work of the Red Cross Society in peace time. Child Welfare was to be one of its chief activities.

Col. Hodgetts spoke of the great amount of work done by the St. John's Ambulance Association in training volunteers in First Aid and Home Nursing. Many of these volunteers had done splendid work at home and abroad.

Mrs. Henderson and Dr. Copp spoke for the St. John's Ambulance Brigade. The active service force of the Association. There were some 80,000 V. A. D.'s trained for emergency service.

Mrs. Hannington spoke of the Victorian Order of Nurses. There was a great shortage of nurses. A particular type of girl was needed for the difficult pioneer work in outposts.

Mrs. Kneil, of the Women's Institutes of Canada, also spoke of the need for workers—trained nurses—volunteers, etc.

Discussion was then opened by Miss K. Olmstead, Secretary

of the National Association of Public Health Nurses, Chicago, who emphasized the need for specially trained nurses in Public Health Work. The United States was establishing centres all over the country for such training, as the training usually given to nurses in city hospitals was not suitable for Public Health service.

Dr. Helen MacMurchy read two short papers: 1. on "Vital Statistics;" 2. on "A Home for Every Baby."

ELECTION OF OFFICERS FOR THE ENSUING YEAR.

The Nominating Committee recommended the following officers and members for the various committees. All were unanimously elected:

Chairman of the Section—Dr. Lionel M. Lindsay, 615 University Street, Montreal, Que.

Secretary of the Section—Miss Mary Power, Provincial Health Department, Toronto, Ont.

Obstetrics—Dr. Gordon Gallie, Toronto, Chairman; Dr. David Evans, Montreal; Miss E. Russell, Manitoba; Miss Luxon, Halifax; Members.

Pediatrics—Dr. Geo. E. Smith, Toronto, Chairman; Dr. L. M. Lindsay, Montreal; Dr. Ferguson, London; Dr. Richardson, Winnipeg; Members.

Propaganda—Mrs. Arthur Murphy, Edmonton, Chairman; Dr. W. A. L. Styles, Montreal; Miss I. Armstrong, London; Miss B. Knox, Toronto; Members.

Vital and Social Statistics—Mr. R. E. Mills, Toronto, Chairman; Dr. M. O'B. Ward, Montreal; Hon. W. M. Roberts, M.D., St. John; Members.

Rural Communities—Dr. F. C. Middleton, Regina, Chairman; Dr. W. H. Hattie, Halifax; Miss Christine Hall, V. O. N., Ottawa; Miss Johns, Winnipeg; Miss J. I. Gunn, Toronto; Members.

Public School Education—Miss Mary Crawford, Winnipeg, Chairman; Dr. S. Boucher, M. O. H., Montreal; Miss Emery, Toronto; Miss Breese, Vancouver; Members.

Heredity and Eugenics—Dr. Helen MacMurchy, Toronto, Chairman; Prof. Carrie Derrick, Montreal; Mrs. Ralph Smith, M.P., Vancouver; Dr. Jasper Halpenny, Winnipeg; Members.

Mothers—Dr. Glenn Hamilton, Winnipeg, Chairman; Miss Z. O. Delaney, V. O. N., Montreal; Miss Beith, Toronto; Miss Haliburton, Halifax; Members.

The meeting then adjourned.

Chairman's Address.

DAVID JAMES EVANS, M.D., ASSOC. PROF. OF OBSTETRICS, McGILL UNIVERSITY, MONTREAL.*

OWING to the fact that Dr. Mullin, of Hamilton, who was elected to act as Chairman at this Section, was prevented from accepting office, your Secretary, Dr. Lindsay, asked me to take the chair on this occasion. It was only at the last minute, when he assured me that he had been unable to secure anyone else that I accepted. However, I am glad to be here, and trust with your co-operation that the meeting of this Section may be most successful.

Last year your chairman, Dr. Alan Brown, in his inaugural address, presented a most interesting and extensive resumé of the progress of Child Welfare Work since its inception in France 40 years ago, particularly emphasizing what was being done in Europe during the war to conserve child life, and also dwelling on the rapid development of Child Welfare Work in the United States during the last six years.

With regard to Canada his remarks were decidedly pessimistic, for he stated that "on surveying the work done in the U. S. and European countries relative to activities in Child Welfare Work, Canada stands pre-eminently alone as being an example of almost total inactivity."

One is glad of that word "almost," for in that one word one finds some slight recognition of the modest but continuous effort to improve the conditions as regards infant mortality in Montreal started over twenty years ago, when the first Goutte de Lait was opened in that city.

This effort to reduce the extremely high infant mortality of Montreal has been more or less steadily continued ever since with increasing success, particularly during the last five or six years. The work has grown steadily, and one is glad to report that in Montreal there now exists an active Child Welfare Committee which is doing a really fine work in centralizing all the Child Welfare effort in the city. An increasingly active interest in Infant Welfare is being aroused in both the French and English sections of the city, and the civic health authorities are doing all in their power to co-operate with the Citizens' Committees, so that definite

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*Section of Child Welfare, Canadian Public Health Association, Toronto, May, 1919.

results of a satisfactory nature are to be looked for in the near future. This year 30 milk stations and baby clinics will be in operation. Last year we had 30 visiting nurses, and this year the number will be increased to 36. A travelling baby clinic has been put in operation with the purpose of reaching the homes of the needy on the outskirts of the city. Mothers are often unable to leave their houses and families for any length of time, and to such the travelling baby clinic has already demonstrated its value.

Three Welfare Camps at least will be in operation this summer —possibly more. A revised and up-to-date by-law regarding the sale of milk within the limits of the City of Montreal has been prepared by the Board of Health, and is arousing the enthusiastic support of the Child Welfare Committee and other such organizations, and it is hoped that it will shortly be sanctioned by the authorities and put into effect.

It is probable that in no other Province of Canada is there a richer harvest to be garnered by the Child Welfare Worker than in the French-Canadian Province of Quebec. The good work which has been started in the City of Montreal must now be extended throughout the Province as rapidly as possible. That the citizens (both French and English speaking) are being aroused to the necessity of the situation is at least evidence of progress, and there is little doubt but that the Province of Quebec will, with a well organized propaganda, soon be brought into line, and an active Child Welfare Work rapidly develop. It is our ambition to follow the good example of Ontario, and get some "Power" into operation in charge of a Quebec Provincial Bureau of Child Welfare which must soon come into being.

The reports of the committee to be presented this morning evidence the manifold nature of the Child Welfare movement. The pre-natal, neonatal, infant and childhood period being all within the scope of effort, it may be said that this organization is concerned with the health, education and training of Canada's most important new citizens. That the leaders in the movement are anxious to bring to the work the most advanced and efficient methods, this meeting is evidence. Here we may exchange experiences, relate our local difficulties, and consult together as to new efforts to be made. Here may be derived inspiration and encouragement from more experienced workers, and we are fortunate to have with us one of the leaders of the movement from the other side of the line, from whom we have heard this afternoon, Dr. Mary Sherwood, of Baltimore.

The period of national reconstruction which this country in common with the other nations of the world is now entering upon, gives increased opportunity for an extension of Child Welfare effort throughout Canada, and it is hoped that the results of this meeting will be the working out of an efficient scheme for the effective inter-provincial co-operation of the various committees throughout the country interested in the growing children of Canada.

For some time preceding the war this country had an elaborate Immigration Department, which was concerned in extending information, principally throughout Europe, in regard to Canada as a desirable country in which to settle, and had an elaborate system for the reception and dispersal of immigrants on their admission to this country. It is to be expected that as a result of the war it will be a long while before immigration to any extent can be revived, and it would seem desirable that pressure be brought to bear upon the Government of this country so that the funds saved by the cessation of immigration efforts might be employed in developing an enlarged Child Welfare movement as a national organization.

Methods of Child Welfare Work most effective and comprehensive have been undertaken and operated successfully, particularly in France and the United States, and it would not be a difficult matter to obtain workers, already trained, whose efficiency would be unquestioned, and it does seem worthy of consideration that some such effort should be made at this time particularly, to bring this matter to the attention of the Government of Canada.

The unsatisfactory method of registration of vital statistics, which predominates in Canada to-day, is a matter that should receive immediate attention. One of the important lessons of our recent experience as a people has been the need of a definite registration system. Time does not permit me on this occasion to enlarge on this topic as its importance demands. It is my desire to direct your attention particularly to the importance of a proper and efficient birth registration system which should be general throughout the country as a whole, whether it be operated by Federal or Provincial Government, though it would seem self-evident that accurate vital statistics should be a matter of Federal rather than of Provincial importance. It is evident that if any accurate knowledge is to be obtained as to the success of the Child Welfare movement in reducing infant mortality, whether in urban or rural districts, there must exist an accurate enumeration of the

infant citizens of the country. That the registration of births is satisfactory—is efficient—or is *even attempted* in large sections of Canada an investigation would soon establish, and it would seem well that such investigation be undertaken as speedily as possible.

In Dr. Alan Brown's address of last year already referred to, he showed that in the banner city of Toronto there was an educational propaganda being carried out to promote birth registration, and that in the metropolis of Canada—Montreal—*nothing* was being done to promote accuracy in birth registration, and that in most cities of this country but little attention was being given to this important section of vital statistics. Our inaccurate vital statistics in Canada may, in part at least, account for the apparently exceptionally high infant mortality of this country.

It is interesting to note in this connection, that in New Zealand, where the most accurate vital statistics have been obtained, the infant mortality is probably lower than anywhere else in the world.

Thus it is to be hoped that a more accurate compilation of vital statistics would result in some reduction of the stigma upon our state of civilization in Canada, which is consequent upon our high infant mortality.

The Republic to the South of us has had a severe lesson as to the value of accurate vital statistics when the Draft Law went into effect during the war. Birth certificates were at a premium for various reasons, and much difficulty and trouble resulted from the lack of a proper system of national birth registration.

In 1904 there were only 10 States that had sufficiently effective registration laws to furnish accurate information relative to marriages, births and deaths which occurred within their limits (Vital Statistics, Bucks ref. in Book of Medical Science). In 1918 some progress had been made, in that 28 out of the 48 States in the Union were in the Registration Area for Deaths, while 20 States out of these 48 were in the Registration Area for Births. It is certainly remarkable that in more than half of the various States that make up the Union, no system of birth registration is in existence.

In Canada the system of registration of births varies in the different Provinces to a remarkable degree, and a study of the statutes of the various Provinces shows that while in most very effective legislation has been enacted, in others there is great room for improvement.

In the Province of Quebec it is interesting to note that the method of registration of births was taken, unchanged, from the Code Napoleon.

One finds on referring to the enactments dealing with birth registration in the statutes of the various Provinces of Canada that they vary much in effectiveness, and that most of them are susceptible of improvement.

The law in regard to the registration of births in the Province of Quebec is quite unique as compared with the general system followed in the other Provinces of Canada. The original birth registration law of this Province was taken from the Code Napoleon. This was in effect till 1906, when it was revised, and the enactment now reads that "the father, or in his absence, the mother, who has not caused a child to be baptized (or not being a Roman Catholic), is bound to cause the birth of such child to be registered within four months at the office of the Clerk of the Municipality in which the birth has taken place, or else with the nearest Justice of the Peace." The latter is ordered to forward to the Clerk of the Municipality during the first two weeks of January of each year a report of the births registered with him in the course of the year preceding.

There is a fine of $50.00 for any contravention of this article, but I have never heard of its being levied on any delinquent.

In certain of the cities of Quebec Province there has been some more or less sporadic attempt made towards effective birth registration. Enquiry has revealed that, in the opinion of an expert, the registration of births is, in the City of Montreal, about 60% efficient, but that probably a higher efficiency is obtained in the strictly French-speaking portions of the Province. The reason for this is that the curé of the parish is registration officer for his parish, and it is his duty to record in duplicate the baptism of every child brought to him for this purpose. One record is sent to the Prothonotary of the Superior Court for the district, while the other is kept in the parish archives.

There is no record, and no means of recording even, in the City of Montreal, the birth of any child. There is a record kept of every birth, a notice of which has been sent to the City Hall, but only for the purpose of forming statistical tables. It is not a registration of the birth of any individual child, and it is impossible therefore to obtain a copy of any such registration, or to verify in the records of the city, the birth of any person born within its limits.

In the statutes of the other Provinces it is enacted that certain individuals shall be responsible for giving notice of the occurrence

of a birth. Usually it is stated that "the father of any child, or, in the case of his death or absence, the mother, or in case of the death or inability of both parents, any person standing in their place or present at the birth, or if there is no such person, then the occupier of the house or tenement in which the child was born, shall give notice to the District Registrar."

In others it is stated that the above-named *or* the physician *or* nurse shall give notice—while others state that the notice must be given by the physician or nurse, *as well as* by those named in the above paragraph. The result is that so many people are concerned in the giving of notice that it is more than likely that each supposes the other has done so, and commonly no notice is given to the Registrar by any of these people concerned.

Occasionally (for instance in the Province of Quebec and in the Province of Manitoba) it is enacted that the priest or clergyman who baptizes a child shall give notice of the birth to the Registrar if this has not already been registered.

In Nova Scotia, New Brunswick, Prince Edward Island, Ontario, Manitoba, Alberta and British Columbia—the physician is called upon to give notice to the Registrar, independent of the parents or others concerned.

With regard to the time in which notice shall be given to the Registrar of the birth of a child, there is a very considerable difference in the various Provinces. The physician or nurse is usually to report a birth within what is termed "forthwith" up to 30 days. New Brunswick requires that the physician shall record the birth within 5 days, but most of the other Provinces give a time limit of 10 days for this purpose.

In all of them except the Province of Quebec arrangement has been made for the registration of the birth of illegitimate children and foundlings.

In five of the Provinces it is enacted that the Registrar may be permitted to register a birth within one year of its having taken place, while in Nova Scotia this limit is extended up to 10 years; in Nova Scotia and Ontario the Lieutenant-Governor is permitted to make a special enactment to allow the registration of births in individual instances, under special circumstances.

In the Maritime Province of Nova Scotia it is interesting to note that any child of a parent or resident in Nova Scotia, born at sea, and an entry having been made in the vessel's log book, any District Registrar may, after sufficient proof of the correctness of such entry, cause the name of the child to be registered in a book kept for that purpose, called "The Marine Register of Births."

Probably the best enactment in regard to birth registration is that of Alberta, which is extremely comprehensive and yet very practical, because it not only compels the parents or guardians of a child to give notice, but it also specifies that the medical practitioner shall separately give notice, "or any person who, in the absence of a legally qualified medical practitioner, assumes the responsibilities and duties in connection with the birth of a child, shall "forthwith" give notice to the District Registrar of such birth having taken place."

Alberta also has a unique clause in its statutes which reads: "Upon any person who claims to be one of the parents of an illegitimate child producing to the Registrar General a statutory declaration by both parties of such child (with certain particulars, particularly the date of marriage), the Registrar General shall register such child (whether alive or dead) *as the lawful issue of such parents*, and shall make a note in the remarks column of the prescribed form to the effect that the registration has been made under this section." If the same child has been previously registered, the Registrar General shall make a note in the remarks column of the previous registration, and on any transcript thereof which may be on record in the archives of the Department.

Delinquency as regards registration of births is common in every Province, and it is probable that an investigation would reveal that in some parts of the country much less than 50% of the births are properly entered upon the registers provided for that purpose.

In every Province there is a penalty of a fine for failure to properly register the birth of a child, which varies from $1.00 to $100. In Nova Scotia the fine is payable, one-half to the city, town or municipality, and one-half to the informant.

In certain statutes it is specified that it is the duty of the Registrar to prosecute for delinquency after a certain period has elapsed, and in British Columbia there is a clause inserted in the enactment which permits the infliction of a fine upon anyone giving false information in the process of registering a birth.

It would seem desirable if some means could be devised to bring to the notice of the Provincial Governments the importance of enforcing, with vigour, the enactments provided for the registration of births. It is probable that a higher degree of efficiency in the administration of this law would be attained if it were enacted that the Registrar in each district must take proceeding against delinquents after a given period has elapsed, and that one-half of

the amount of the fine imposed should be payable to the city, town or municipality, and one-half to the Registrar, instead of to the informant, as is the case in Nova Sctia.

It would seem that a higher degree of efficiency of birth registration might be attained if it were enacted in each Province that the physician, midwife, nurse, or anyone officiating in conduction of a midwifery case should be compelled to send, within 5 days, to the Registrar of the District in which the birth took place, a notice of such birth, whether the child is born alive, dead, or premature. Forms should be provided for this purpose, and should be transmitted by mail, free of postage duty.

Having this information the Registrar should be called upon to send a blank form to the address given on the physician's report, and if reply is not forthcoming within a limited number of days, steps may be taken to ensure that the desired information shall be obtained.

It is at this point that the Baby Welfare Nurse in any given community will find her opportunity, for by coming in contact with the parents of a new-born child at this early period, she will be enabled to carry on her educational campaign to the best advantage.

At the present time the public throughout the country has had a lesson, as the result of the enactment of the Draft Laws, of the importance of birth registration as establishing not only the birth and parentage, but the nationality of each individual child.

I have been told that not infrequently candidates for admission to the Bar in the Province of Quebec have great difficulty in establishing to the satisfaction of the authorities the fact that they have passed the age of 21 years, owing to the lack of a properly registered birth certificate. At present the public well understands that it is to the advantage of the Provincial or Federal authorities to have births registered as they occur, but we must now develop an educational propaganda to teach the public the value to the individual citizen of efficient birth registration.

As far as I know, in the whole of Canada there is apparently only one Province that issues a birth certificate on the occurrence of registration. It is desirable that every birth recorded should be followed by the issuance of a birth certificate to the guardians of the child.

The enactment of compulsory vaccination has been, on the whole, pretty efficiently enforced throughout the country, and the occasional occurrence of more or less localized epidemics of small-

pox serves to enforce the carrying out of compulsory vaccination, and impress upon the public the fact that such vaccination is enacted by law. It would seem that the same end might be attained in regard to birth registration, if, besides a certificate of vaccination, every child on entering a public school should be compelled to produce a birth certificate in order to establish his age and nationality.

The same demand might be made in all the higher institutions of learning on matriculation. For many of the higher degrees the candidate's assurance that he is not under 21 years of age is accepted at present without question, instead of being established by law.

No boy or girl should be permitted to enter upon a business career, or to obtain employment in a factory, without a birth certificate having been produced, and the child's age recorded by the firm or corporation concerned.

Before a marriage license can be issued the birth certificate of both applicants should be demanded. By this means in the course of time the public would be trained to appreciate the importance to the individual of the possession of a properly registered certificate of birth.

In the course of time by these means we would attain to a fairly accurate knowledge of the vital statistics of child life in this country, and in this Child Welfare Work it would seem that such action is not only urgent, but is absolutely a primary necessity.

Secretary's Report, 1919

Child Welfare Section, Canadian Public Health Association

LIONEL M. LINDSAY, M.D., *Montreal.*

THE work of the Secretary had been much handicapped by the fact that there was no Chairman of the Section, for the greater part of the year. Dr. Mullin, of Hamilton, who was elected a year ago to this office was unable to accept the position, and it was not until the eleventh hour that Dr. Evans was prevailed upon to take the chair. As a result of this and the Secretary's inexperience in public health work, much valuable time was lost and much left undone which might have been accomplished.

Yet in corresponding with the various committees of the Section, one naturally obtains a broad view of the field of Child Welfare Work, and a few remarks and suggestions may not be amiss.

In the first place, the policy of the Child Welfare Section of C. P. H. A. should be Dominion-wide in its scope. Every Province should be represented on its committees as well as all the larger towns and cities. This had not been the case in the past, although we have made an endeavour to include as many as possible this year.

In a country like Canada, where distances are great, it is not always possible to have delegates from all parts at every convention. Yet those representatives who are unable to attend the annual or other meetings should submit a report of some work being done in their constituency, and in that way we shall keep in touch with each other.

To emphasize this spirit of co-operation I would like to suggest that a National Baby Week be instituted, such as was held in England in 1917, which brought before the whole country the importance of saving mothers and babies as a war measure, and which would be just as important a measure in reconstruction. This might be more easily accomplished if promulgated from a Federal Health Bureau at Ottawa.

In this way we would tend to unite all local agencies, philanthropic, municipal, Provincial and Federal, which are or may be working for the betterment of the child. By this united effort more would be accomplished and a better understanding engen-

dered. The problems of one Province may be solved by the experience of another, the mistakes of one avoided by another.

At the meeting in Hamilton last year seven committees were called into being: 1. Obstetrics; 2. Pediatrics; 3, Propaganda; 4. Statistics; 5. Rural Communities; 6. Child Welfare in war time; 7. Public School Education for Prevention of Infant Mortality.

Of these the last two have become defunct.

"Child Welfare in War Time" automatically dissolved on the cessation of hostilities, and this was enforced by the untimely death of the chairman, Mr. Frost, of Hamilton.

The very important Committee on Public School Education for Prevention of Infant Mortality, was shelved for the time being owing to the emigration to Minnesota of the chairman, Dr. H. W. Hill, of London. This committee must be revived at the present meeting, as the experience and results derived from such efforts in the United States have been shown to abundantly bear fruit. Mother-craft must no longer be considered a natural instinct, but a profession of the highest order. All girls must be trained in the care of children, for few women do not have to care for children whether their own or another's, at some time in their career. The best place to instill the elements of this training is in the school. Little Mother's Leagues have accomplished much, but the attendance is voluntary, and therefore apt to be limited and desultory.

In a country like Canada, there can be no more fruitful field for public health activities, than those in rural communities. The difficulties to be overcome in this field in sparsely populated districts are collosal, and the work has been considered so important that a special session has been devoted to the Committee on Rural Communities, in order to give every opportunity for a discussion of the problems.

But these five or six committees do not seem to adequately cover the ground of Child Welfare Work, and I would like to suggest that the following committees be considered, and if advisable called into being .

1. Committee on Heredity and Eugenics.

Every child has a right to be well born. Healthy parents are the first essential of healthy children. One-third of all the infant deaths occur in the first month and are largely due to pre-natal causes. We are so absorbed in trying to improve the environment for the child, that we are inclined, I think, to neglect the important part played by Heredity. The comparative influence of environ-

ment and heredity in the development of the individual is a much-debated question. Both Eugenics and "Euthenics" (as the scheme for environmental betterment has been termed) must find a place in any new attempts to improve the "health rate" of the nation.

The child must be both endowed at birth with good racial qualities and born in a good home if the result, the finished man, is to be of the best quality.

2. A COMMITTEE ON MOTHERS;

Which might include such subdivisions as:

Prenatal Work.
Mothers' Pensions.
Maternal Mortality.
The Unmarried Mother.

The importance of pre-natal work is now universally recognized, and has been called "The Greatest Discovery of the Twentieth Century" (by Ernest Williams, President of the London Brotherhood Federation).

While the infant death rate from diarrhœa, respiratory, contagious and other diseases has declined during the past ten years, the rate for congenital diseases has remained practically stationary. Any further reduction in Infant Mortality must therefore come largely through concerted efforts in the direction of pre-natal and confinement work. "Give me good pre-natal conditions and intelligent motherhood, and I have no doubt of the future of this or any other nation," cried John Burns.

Mothers' Pensions also play an important part in the conservation of child life—several of our Provinces have already instituted them with great success. Everyone agrees that except in rare instances the home is the only place to bring up a child, and the mother is his right and proper guardian. Experience had abundantly shown that state allowances to mothers is the most economical as well as the most socially advanced method of caring for dependent children at the present time. In the future we shall go another step forward when we institute a complete system of industrial accident and sickness insurance for the whole Dominion.

Mental Mortality should be considered in connection with infant welfare work. It has been found that in the United States that for every 154 babies born alive one mother loser her life. While the percentage is not high, the actual figures make one realize the seriousness of the situation, *e.g.*, in the United States, it is estimated that in 1913 over 15,000 women died in child-birth, and

nearly half of these were due to puerperal sepsis, a disease which is largely preventable by proper care and skilled attendance. This subject naturally falls under the jurisdiction of both the public health nurse and the obstetrician. Little has been done as yet to show the women of our country that much of the waste of mothers' lives and health is unnecessary.

Any scheme for solving the problem of the *unmarried mother* will be of double benefit to the community. First the salvation of the mother from a downward career, for, although many of these mothers are mentally defective, there are others who only need a chance and a helping hand to convert them into good citizens.

Secondly—The reduction of the high mortality amongst illegitimate infants, which is nearly double that of the legitimate.

This high death-rate is partly due to neglect on the part of the parents—and partly to the institution life, to which these unfortunate infants are relegated.

Legislation is now holding the father more and more responsible for the support of these children—and the last word in this connection has been pronounced by the Missouri Children's Code Commission, which is worthy of attention.

3. A CHILD LABOUR COMMITTEE, too, might not be out of place, and in this connection it is interesting to note that among the labour clauses of the present Peace Treaty there is one to abolish child labour, and the imposition of such limitations on the labour of young persons as shall permit the continuation of their education and assure them proper physical development.

But it is manifestly impossible to have committees to cover every phase of Child Welfare Work. The milk question, mental deficiency, juvenile delinquency, housing conditions, adequate wages, and the many similar and allied topics would all have to be taken into consideration. Nor are the committees as they stand independent entities; the activities of any one will more or less overlap those of another, but in this way the committees are knit together in a co-ordination of effort.

It is, then, with a view to strengthening this co-ordination and of unifying ways and means that all eyes are now focussed with interest on Ottawa where with the establishment of a Federal Department of Health and a Division of Child Hygiene much may be done to systematize all activities. The day is passing when sporadic efforts of philanthropy or of state can be tolerated. The greatest efficiency can only be obtained by centralization. There should be strong central control and direction of the administration, with

the full use of existing agencies to avoid duplication of organization, skill and expense.

The war has taught us no greater lesson than the necessity of state control of National Health. Most of us were astonished at the high percentage of men rejected as unfit for military service, not only in this country, but also in England and the United States. In this connection Arthur Keith remarks that in the past our error has been in focussing our attention too much on the birth-rate and death-rate to the neglect of what he aptly calls the "health-rate" of the nation. "You cannot maintain an A1 Empire on a C3 population," was the terse remark of Lloyd George.

Finally, in the words of Disraeli, Public Health is the foundation upon which rests the happiness of the people and the welfare of the nation.

Saving Babies in Halifax

A Description of the Recent Halifax Baby Saving Week.

HALIFAX, Nov. 21, 1919.—It is true that one can never tell how far reaching a thought, a word, an act may be, nor how pregnant with good for many. When Miss Luxon, Superintendent of the Victorian Order Nurses, at Halifax, a year ago spoke to the local president, Mrs. Dennis, about having a Baby Contest as a basis for showing mothers what could and should be done for babies, she little dreamed of the present adaptation of her idea. For Halifax has just completed an eight-day Baby-Saving Week which has garnered up all the work of all the Welfare organizations and workers for years past as a result of that suggestion. It looks as if this old city had entered upon a new era, when its infant death rate shall be a better index to its intelligence than it has ever been in the past.

The Local Council of Women took the responsibility of holding the week's conference with an exhibit, and had the hearty co-operation of the Victorian Order, the St. John Ambulance Brigade, the Graduate Nurses, the Welfare Bureau, the Dispensary, Halifax Infants' Home and others, and last, but far from least, the Massachusetts-Halifax Health Commission, without whose aid not nearly so much could have been accomplished. The Mayor and the City Council, the Premier of the Province and Lieutenant-Governor Grant, all gave the project sympathetic support, while the Rotary, Commercial, Progressive and Fortnightly Clubs all invited the visiting experts to address them.

The exhibit sent from Montreal by the Baby Welfare Bureau of that city, proved to be most interesting and instructive. The Montreal Bureau also sent Miss Drew as demonstrator. The Canadian National Committee for Mental Hygiene sent Miss I. N. Cole, an expert in Mental Hygiene, formerly of the Johns Hopkins Psychiatric Clinic, with a mental and social hygiene exhibit. These loaned exhibits occupying six booths were supplemented by eight booths carrying graphic exhibits local in lesson and three booths used in measuring, weighing and judging the improvement of three hundred babies for six months under the care of the Victorian Order of Nurses.

The moving pictures viewed by four hundred school children each morning shown each afternoon and evening before lectures and illustrated thoroughly all phases of baby hygiene.

The programme had great scope and variety and was participated in by all the authorities in the various phases of public health, physical and mental, both in the city and the Province.

There were three sessions daily; the first, beginning at 10 o'clock, was mainly for school children, who came in two detachments under the supervision of their teachers, enjoyed the film pictures, the exhibit itself, and listened to an interesting talk by Miss Drew. What the children got from these sessions is to be tested by little stories they are to write of their experiences, the best of which will probably be published in the local papers.

Among the topics for discussion were "Nova Scotia's Baby Problems, Present and Future," ably handled by Dr. W. H. Hattie, Provincial Medical Health Officer, who was the first speaker after the formal opening by His Honour Lieut.-Governor Grant and His Grace Archbishop Worrell. All the papers and discussions following grew out of this opening paper, and all of them dealt with some phase of Nova Scotia's baby problems. Dr. Clarence Miller, of New Glasgow, talked delightfully on "Better Babies for Nova Scotia," Dr. J. L. Churchill handled the question, "Why Halifax Needs Plans for Baby," and Rev. Dr. William Foley, of St. Mary's Cathedral, set out "The Value of a Baby Life."

Having found out the value of a baby to the community it was essential to discover what the community could do for the baby, Dr. B. Franklin Royer, Executive Officer of the Massachusetts-Halifax Health Commission, started this side of the discussion with an enlightening talk on "The Health Centre as Affecting Baby," followed by "What Registration May Mean to the Baby," by Mrs. E. M. Murray.

Another session heard Dr. A. F. Miller, Medical Superintendent of the Provincial Sanitorium, talk on "Protecting Baby from Tuberculosis," a thing that Nova Scotia sadly needs to learn. The talk was simple, helpful, encouraging, and sounded the keynote of "Prevention." This was the dominant thing in all succeeding talks, such as "The Causes of Diarrhoea in Babies," by Dr. M. G. Burris, of Dartmouth; "Correction of Remedial Defects in Babies," by Dr. S. J. McLennan, of Halifax; "Milk Mixtures for Bottle Babies," by Dr. E. Kirk MacLellan, Halifax; "Importance of Breast Feeding for Babies," Dr. May Austen; "Protecting Baby from Contagious Diseases," Dr. A. C. Jost; "What Bacteriology has Done for

the Baby," Dr. A. G. Nicholls; "Hygiene of Birth Chamber," Dr. C. S. Morton; "Heredity as it Affects Baby," by Mr. J. B. Kenny, President Board of Directors Halifax Dispensary, and "What Labour Organizations May do for Baby," by Mr. John T. Joy.

Following "Prevention" came the "Care of Babies," and under this head there were many phases of "Care" discussed, and many good things said. If any one paper could be said to be more important than another, perhaps it would be possible to rank Dr. W. H. Schwartz, of the Halifax Dispensary, as having achieved that first position. His topic was, "New Born Babies, Why Blindness?" It is safe to say that Dr. Schwartz told some plain old truths and some important new ones in a way that will be long remembered. Other valuable papers and demonstrations in the department of the "Care of the Baby" were "Hygiene of the Baby," by Miss Barrington, Halifax Infants' Home; "Bathing and Dressing the Baby," Miss Tait, Victorian Order of Nurses; "Health Teaching in Baby's Home," Miss Kilrain, Director field and clinic work in Halifax county for the Anti-Tuberculosis League; "What Women May do to Lessen Wastage of Baby Life," by Miss MacKintosh, Dean of Women's Faculty, Acadia University; "Baby's Tooth; What Care Should We Give It?" Dr. W. Woodbury; "Effects of Bad Housing on Babies," Mr. J. T. Wilson; "Revitalizing Devitalized Babies," Miss Bamford, of the Children's Hospital, Halifax; "What Father May do for Baby," Venerable Archdeacon Armitage, St. Paul's Church; "What Mother May do for Baby," Mrs. J. Charlotte Hannington, Chief Superintendent V. O. N., Ottawa; "What Sister May do for the Baby," Miss Wisdom, General Secretary Welfare Bureau; "Weaning the Baby," by Dr. A. I. Mader; "What the Red Cross May do for Baby," by Mr. William Dennis; "Clothing for Baby," Mrs. R. H. Murray, Dartmouth; "What Milk Producers May do for the Baby," by Mr. John A. MacDonald, President Milk Producers' Association; "Certified Milk for Bottle Babies," Dr. George Townsend, Dominion Department of Agriculture; "Effect on Babies if Entire Milk Supply were Pasteurized," Dr. B. Franklin Royer, and a very important address on "Social Hygiene as affecting Babies," given by Miss Cole, expert in charge of the Social Hygiene Exhibit.

Never before has it been the good fortune of Halifax to hear so much about the prevention of disease and the proper care of babies in any given time, as was heard during the eight and a half days at the Baby-Saving Conference. There can be no surer proof that its educatonal purpose was accomplshed than that a psychiat-

ric clinic has already been decided upon in connection with the Halifax Dispensary.

The Baby Contest, which was not a baby show, appealed to a very great many mothers and the number of babies brought for examination increased daily. In fact, the last session held on Wednesday morning, November 12th, saw more babies presented for the tests than on any previous day. The value of this one feature alone can scarcely be over-estimated, for mothers learned there how to bring their babies up to standard and the doctors and nurses engaged in the examination also learned what help it lay in their power to give.

A Plan for a More Effective Federal and State Health Administration

FREDERICK L. HOFFMANN, LL.D.
Third Vice-President and Statistician the Prudential Insurance Company of America

(*Continued from our last issue*).

What has thus far been achieved in giving publicity to the results of investigations in the field of industrial hygiene and sanitation is best illustrated by what has been done through the U.S. Bureau of Labour Statistics. Among the more important bulletins issued by this office are reports on Phosphorus Poisoning in the Match Industry in the United States (1910); Industrial Lead Poisoning of Great Britain and the White Lead Industry in the United States (1911); Lead Poisoning in the Potteries (1912); the Hygiene of the Painters' Trade (1912); Lead Poisoning in the Manufacture of Storage Batteries (1912); Industrial Poisons Used in the Rubber Industry (1912); Anthrax as an Occupational Disease (1912); the Hygiene of the Printing Trade (1912); Industrial Poisons Used or Produced in the Manufacture of Explosives (1912); Mortality from Respiratory Diseases in the Dusty Trades (1918), etc.

The investigations have, however, in the main, been concerned with the more obviously dangerous industrial processes. The larger field of industrial activity in its relation to health has as yet received entirely inadequate consideration. Only a thoroughly coordinated Federal and State health service, acting in co-operation with labour departments and industrial accident boards, can succeed in securing within a reasonable period of time the required basic data for a thoroughly practical industrial hygiene. The gradual adoption of the principle of workmen's compensation for industrial diseases gives promise of useful results. It is, in fact, a foregone conclusion that, if such a principle becomes universal throughout the country, a large number of occupational diseases, now more or less obscure or ill-defined, will be ascertained, as best illustrated perhaps by the case of miners' nystagmus, and the rather rare forms of occupational skin diseases. It is, therefore, to be urged that more adequate provision should be made, even under existing conditions of public health activity, for the ascertainment and prevention of occupational diseases.

To be continued.

The Social Background

Raising the Standards of Living as a Weapon in the Anti-Tuberculosis Campaign

BAILEY B. BURRITT,

General Director of the New York Association for Improving the Condition of the Poor.

THAT there is a direct relation between the standard of living of a people and its health there can be no possible doubt. That there is a correlation between the standard of living and the mortality and morbidity from tuberculosis seems conclusively probable in spite of the fact that there is such a dearth of definite and reliable information with regard to this problem. Everyone in their talk about tuberculosis and their plans to deal with it more or less consciously, or if not consciously, unconsciously assumes a direct correlation between the standard of living and tuberculosis. The unfortunate thing about the matter is that we cannot speak assuredly of proven facts. I suppose I am not different from most others interested in the problem of public health, but I find myself handicapped each time I talk about public health problems, or each time I think about them, and especially each time I undertake to make any definite practical plan for public health work by the fact that there is so little reliable information about the lack of health, the amount of it, the cost of it, the cause of it and the other numerous social effects of it. Think of the appalling mass of ungathered and, therefore, relatively meaningless information about the amount of tuberculosis, about what it costs the community about the real underlying conditions that cause it, about the relation of it to income, the standard of living, etc. In spite of all of our educational campaigns and our interest in the tuberculosis problem, we have not as a community yet taken it very seriously. We still consider it much more important to be able to speak with accuracy about the number of bushels of wheat which were consumed in the United States in 1918, or the number of tons of coal consumed, the number of tons of pig iron produced, the number of dollars deposited in savings banks, the number of gallons of alcoholic liquors produced and consumed, the number of diamonds imported and their value, the minute analysis of the number of votes cast for the President of the United States in the past election and various other useful and semi-useful statistics—we still consider it much more important to speak with accuracy about these

things than about the number of days' work lost through tuberculosis in the United States in 1918, the number of years of life either removed altogether or removed at any rate from usefulness because of the fact that tuberculosis has interfered with individuals living their expected average length of life, the relation that exists between tuberculosis and income and other important statistical information of the greatest possible significance to the economy of the country, to its health and general comfort and happiness. I repeat, we haven't yet taken the tuberculosis problem or the general health problem seriously enough to really get facts about it, and this enemy cannot be conquered without advance information as to the number of effectives which he controls, the strategical strongholds which are in his possession, the amount of resources at his command, and the most practical engines of warfare for routing him from his position.

But this is a digression from the main subject of this paper, a digression made necessary by the lack of information about the subject matter of the paper—a digression necessary in the consideration of nearly every important public health matter.

The Difference Between Rise in Income and Rise in Standard of Living.

I should point out also that there is a distinction between the rise in income and the rise in the standard of living. These two factors may tend to rise together, but the rise in the standard of living involves an educational process which cannot be immediately and readily acquired. The family that increases its wages from three dollars to six dollars a day and still continues to make fried potatoes a main article of diet for child and adult alike has not doubled its standard of living, although it has doubled its income. It is necessary, therefore, to discuss these two factors somewhat separately in their relation to the tuberculosis problem.

I have already intimated that there is not much available evidence carefully gathered and put in the form of scientific proof that there is a direct correlation between increase in income and decrease in the incidence of tuberculosis. In a very limited way in the City of Farmingham, Massachusetts, the greatest amount of tuberculosis was found in income groups of from $1,200 to $1,800 per year. The income groups, below this and above it both had lower rates, the facts being as follows: Under $1,200, 4.3%; from $1,200 to $1,800, 5.1% and over, 2.7%. The number of families involved is altogether too limited and the character of the inquiry alto-

gether too local to make these statistics, which are almost the only ones existing, of any great value other than suggesting the necessity of further inquiry. We are bound, therefore, because of the lack of definite statistical information to fall back on a priori reasoning and the application of common sense to the problem in the absence of facts.

Evidence seems to indicate that relatively few individuals escape the tuberculous germ. He is too prevalent a beast of prey in the primeval forests of unprevented disease in which we work to give us much hope of hiding from him successfully throughout the years of our lives. It is a great game of chance with most of us—chance where it should be scientific forethought as to whether in the inevitable attack which we are subject to, the individual person or the germ would be the winner. It is, according to our experts, largely a matter of resistance. If we are naturally normal, strong, healthy individuals and have not allowed ourselves to become weakened, we may withstand his attacks successfully. If, on the other hand, through ignorance of ours, our parents, or the community, or if through lack of resources we have allowed ourselves to become abnormal, weak, unhealthy individuals, the chances are against us.

Good Resistance Essential: Factors.

Now what are the things that go to build up effective resistance? They are, first of all, a good birth. This implies a mother well informed as to the care of herself during pregnancy, freedom from overgreat strain of work and worry during pregnancy, the provision of adequate facilities for periodical examinations and medical supervision and the ability to provide adequate facilities at the time of birth. If these factors are present and the mother before pregnancy is not already weakened unduly because of hereditary or environmental factors, there should result a normal babe eager for normal conditions to develop into a normal healthy man or woman. He must, however, be well fed, not only during the immediate period of infancy, but particularly during those trying years from weaning to school age, when the nutritional needs of the child are more specialized than the family is often able to meet either through ignorance of the child's needs or for economic reasons—more frequently the former. If through the operation of either of these factors, the child does not secure the proper kind of as well as the proper amount of food, his power of resistance against the common enemy, tuberculosis, is undermined before he gets a fair start.

There is little hope also of building up this normal babe into a successful resisting force unless it has ample access to good air. Continuous confinement in the ill-ventilated, closed rooms of crowded tenement quarters, or of millionaires' residences, for that matter, does not make for healthy resisting bodies. We have made much progress in education as to the necessity of fresh air. We are still, however, in New York City at any rate, far from breathing anything like an adequate amount of it, and it is not altogether because of its inaccessibility. It is, however, much more common than formerly to see the young babe, even in cool periods of the year, sleeping in its carriage on the roof, in the back yard, sometimes on the fire escape, and more frequently than formerly, in a room with an open window. The closed window, however, is still a good friend of the army of tuberculous germs, this dread army more exacting each year than was the Germany army at the height of its diabolical attacks upon our life and health.

Good light is the corollary of good air, but it is of sufficient importance to mention as among the requisites for building up the breastworks of resistance. The tuberculous germ shuns the light of day. The inner tenement room barred from the possibilities of the light of day is his great friend. There is too a direct correlation between income in New York City and the inner dark room. We need, however, in New York City and probably in our oldest and largest cities of the country not only a rise in the income of the lowest paid group in order to defeat the dark-room difficulty, but also a liberal application of dynamite to impossible old tenements, impossibly constructed, covering an impossibly large percentage of the ground space of the lot. It is disheartening to the tuberculosis nurse, charged with the responsibility of preventing the development of tuberculous children in families whose parents have tuberculosis already, to have to cope continuously with the dark room tenements. Move the family out into better quarters, is the remedy which we try to apply, but the application of this remedy is beset with the almost certain knowledge that some other family with resistance low enough to succumb to tuberculosis will move into the vacated darkness.

Adequate rest is a resistance builder. One of the reasons why there exists a correlation between the number of persons per room and the amount of tuberculosis is undoubtedly due in part to the fact that it is physically impossible to secure adequate rest with too many persons per room. Then, too, there is not only the question of the number of persons per room but the number of persons per

bed. A family which I recently visited in New York, in which the father was tuberculous and in which there were five children, had two beds, one of them full size and one three-quarter size. Those two beds were able allies of the tuberculous germs in that household. One of the considerable items of an adequate relief programme in connection with tuberculosis, therefore, inevitably is needed for additional beds and bedding.

Freedom from overwork is closely allied to the necessity for adequate rest. Prolonged periods of overwork without adequate periods of rest or change makes the tuberculous germ rub his hands for joy.

Ignorance as a Factor in Resistance.

But any catalogue of the factors that make for resistance must not overlook the factor of ignorance. There can be no possible question of the direct correlation between ignorance and tuberculosis—between non-ignorance and health. There is a surprising amount of it in the homes of the well-to-do and of the middle class, and an appalling amount of it among the poor. Relative ignorance of suitable care of the pregnant mother runs through all society. The child's birthright to be born well is interfered with altogether too frequently through ignorance. When born, his right to develop into a healthy child is interfered with through ignorance—ignorance of suitable feeding, suitable clothing and suitable care. Pot-bellied, bow-legged babies are the direct result of ignorance. Then, too, we allow our children to be choked off from an adequate supply of air through ignorance not only with regard to the necessity of ventilation, but ignorance with regard to nasal defects, adenoids and other throat defects, the remedying of which are relatively easy when we as communities cease to be blind and ignorant as to the results of neglecting these factors. We are similarly ignorant with regard to the inevitable result of neglect of teeth in undermining resistance. We have yet to learn that intensive attention to the physical defects of child life are the essentials of normal physique and that they must stand out prominently in any programme for the prevention of tuberculosis—or its care either, for that matter.

These then are some of the essentials for building up resistance. Let us examine them briefly in the light of their relation to rise in income. There is obviously a point below which you cannot reduce income and make it possible for a child to be well-born. By no means all the children from families above this minimum income are well-born. There is probably, in other words, a direct correla-

tion between income and "well-bornness." There is, however, a ruggedness and strength that goes with hard work and laborious exercise that compensates, to some extent, if only the income is not too low to sap this ruggedness and strength of the physical labourer. When, however, the economic condition of the family requires employment of the pregnant mother at heavy labour until the birth of the child it again interfers with the child's birthright. Without pursuing this thought further, suffice it to say that while there is probably a direct correlation between income and being well-born, there are many factors entering which deprive the greater income from producing a proportionately better-born baby.

So far as the factor of nutrition is concerned, there is probably, though not altogether certainly, a correlation between income and suitable nutrition. Good food, however, is very simple food, and doubling the wage does not necessarily double the knowledge as to suitable feeding. It does increase the ability to buy a sufficient quantity of good food, it doubtless increases quality somewhat, but it does not by any means mean that the child or individual gets a food supply that is improved in both quality and quantity, and especially in method of preparation, in proportion to the improvement of the income itself.

The possibilities of good air, good light and good rest probably has a more direct correlation with income. But here again the factor of ignorance plays a large part, and it is quite certain that the amount of ignorance with regard to the whole range of health problems is not at all closely correlated with wage or income.

The Association for Improving the Condition of the Poor in New York City has continuously under its care some five hundred families in which the Association is supplying a considerable part of their income (this is in addition to a much larger number of families in which emergent or reasonably temporary care is provided). The Association believes it has a fairly adequate policy of relief and that these particular families are securing sufficient funds to provide the necessities of life on a sufficiently adequate basis to maintain strength and health provided the funds are wisely used. This income, while reasonably adequate, is nevertheless a minimum income. In other words, it is established at a point below which we believe that the health of the family would be endangered. It has been a continuous surprise to me that the families cared for for a continuous period of time, including several years in many cases, on this reasonably adequate if minimum basis are able to maintain so good a degree of health. In spite of the fact that many of these famlies were tuberculous when first known to our

work, or are widows' families in which the father died from tuberculosis, we have had a remarkably small incidence of tuberculosis. Continual supervision of the nurses assisting the family in discovering symptoms of defects early and in dealing promptly with them enables these families to compare most favourably with normal families in their general health.

GOOD STANDARD OF LIVING DIRECTLY RELATED TO TUBERCULOSIS.

As I indicated in the beginning of the paper, there is a difference between income and standard of living. I like to think of standard of living in terms of all the factors which make up a healthful existence. If defined in this way, there obviously must be a direct correlation between standard of living and tuberculosis. An adequate standard of living, in other words, implies adequate income, adequate knowledge of the essentials of health and a willingness to apply this knowledge. Those of us who are interested in the tuberculosis problem will make a mistake if we rest content with present incomes of the lower range of the income group. We will make a further mistake if we assume that the tuberculosis problem is to be solved solely by an increase in income. The fruitful attack on the tuberculosis problem of the future is the one that insists on the necessity first of an adequate income, and secondly, on an adequate education in health problems to the point where the essential information with regard to health becomes an integral part of the life requirement of every individual. It will include intensive attention to the prenatal and postnatal problem and intensive treatment of the physical side of child life during its earliest years. This intensive attention to physical childhood will include first of all suitable feeding of the child not only before weaning age, but after weaning age. It will include suitable provision for a regular and periodical examination of the child. More particularly, it will include provision for dealing with the defects of the individual child, defects of the nose, throat, teeth, eyes, defective nutrition and any other defects that may be discovered, and it will deal with them sufficiently early to prevent their becoming aggravated. Nothing less than a health goal which will give to every individual, first, the right to be well-born, and second, the right to develop into a normal healthy childhood and adulthood will ever put the tuberculous germ back of the line and keep him there. Only then shall we have a decent standard of living and raising the standard of living in this sense is the surest weapon in this warfare —the warfare which must have no armistice, no peace, only extermination for the enemy.

The Provincial Board of Health of Ontario

Cases and Deaths from Communicable Diseases reported by Local Boards of Health for the Month of December, 1919.

COMPARATIVE TABLE.

Diseases.	Dec. 1919 *Cases*	*Deaths*	Dec. 1918 *Cases*	*Deaths*
Smallpox	1,414	2	5	0
Scarlet Fever	554	17	194	4
Diphtheria	744	65	278	24
Measles	1,026	14	18	3
Whooping Cough	214	9	57	5
Typhoid Fever	51	21	18	3
Tuberculosis	111	95	161	138
Infantile Paralysis	7	2	0	0
Cerebro-spinal Meningitis	26	9	9	6
Influenza	11	5	.....	.....
Acute Influenzal Pneumonia	.....	3	.....	.....
Acute Primary Pneumonia	.....	180	.....	.....
Relapsing Fever and Dysentry	.....	.....	.....	.....
Typhus	1	.....	.....	.....
	4,159	422	740	183

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH.

Diseases.	Dec. 1919 *Cases.*	Dec. 1918 *Cases.*
Syphilis	109	64
Gonorrhoea	110	110
Chancroid	5	4
	224	178

News Items

Dr. M. M. Seymour, Commissioner of Health of Saskatchewan, Regina, has been confined to bed as a result of a severe attack of lobar pneumonia. It is with pleasure that we have learned that Dr. Seymour is making satisfactory progress towards recovery.

Dr. Harold Orr has been appointed to take charge of venereal diseases prevention work for the Provincial Department of Health of Alberta. Dr. Orr made an enviable reputation for himself overseas in the Canadian Army Medical Corps, where his work on the "Orr" Disinfector gained for him well merited distinction. The Alberta Department is to be congratulated on having secured Dr. Orr's services.

Plans for the Ninth Congress of the Canadian Public Health Association to be held in Vancouver next June are being made by Dr. H. E. Young, of Victoria, Health Officer for British Columbia, and by Dr. R. H. Mullin, Director of Laboratories, Vancouver General Hospital. Public health workers should make every effort to be present at the Vancouver meeting, which promises to be a most successful and worth-while event.

Dr. C. A. Hodgetts, of the Federal Department of Health, Ottawa, convenor of the Ontario Provincial Council of the Canadian National Council for Combating Venereal Diseases, sent out a call for an organization meeting in Toronto, on January 22nd last.

Dr. A. J. Douglas, Medical Officer of Health, Winnipeg, has been elected vice-president of the American Public Health Association. The JOURNAL extends heartiest congratulations.

Dr. George D. Porter, the energetic and popular General Secretary of the Canadian Association for the Prevention of Tuberculosis, delivered an address recently to one of the largest audiences ever gathered together in St. John, N.B., to listen to an address on a public health topic.

Dr. Rankin has resumed his duties as Provincial Bacteriologist of Alberta, at the Laboratories of the University of Alberta, Edmonton South.

Dr. Lindsay, who formerly was officer in charge of a Mobile Laboratory in France, has been appointed Professor of Bacteriology in the University of Saskatchewan, Saskatoon.

Dr. Bow, M. O. H., Regina, is on leave of absence, and is doing graduate work leading to the D. P. H. in the Department of Hygiene, University of Toronto.

Dr. J. J. Heagerty, D. P. H., Bacteriologist at the Dominion Government Quarantine Station at Grosse Isle, Quebec, is doing research work for a few months in the Research Division of the Connaught Laboratories, University of Toronto.

Dr. Alan Brown, Physician-in-Charge, Hospital for Sick Children, and Associate Professor of Medicine in charge of Pediatrics in the University of Toronto; and Dr. J. G. Fitzgerald, Professor of Hygiene and Director of the Connaught Antitoxin Laboratories, University of Toronto, have been appointed Consulting Physicians to the Division of Public Health of the Provincial Board of Health of Ontario.

The annual general meeting of the Canadian Red Cross Society is to be held in Toronto on February 5th. The Executive of the Society will hold meetings on the two days just preceding that on which the annual meeting is to be held. The peace-time programme of the Society has as one of its objects "the improvement of health, prevention of disease and mitigation of suffering."

Public health nursing is coming into its own in Canada. The University of British Columbia has established a course leading to a degree in public health nursing; and the Department of Social Service of the University of Toronto is giving a special course for public health nurses, during the present session.

Dr. John A. Amoyt, C. M. G., Deputy Minister of Health, Department of Health, Canada, gave an address on "Public Health" before the Annual Congress of the Social Service Council of Canada in Montreal, in January last.

Editorial

Service

The following appeared as a frontispiece on the latest bulletin of the Canadian Red Cross Society, and points out so concisely and so appropriately what the heroes of the Great War have done for us all, that we may well dedicate ourselves afresh to the Service of Mankind.

The lines are as follows:—

"To Give Thanks."—"We are but a short space from those days when men and women showed themselves equal to the supremest of all sacrifices: when for the sake of a great ideal countless men gave up all quest of material things, laid aside all thought of self and creature comforts and went forth to suffer and die for the betterment of life. All that was theirs of hope in years to be they gave ungrudgingly. Is it not for us who are left to give deep and reverent thanks that it was given to us to know such high and gallant hearts, that to us there remains this priceless possession—that by the valor of their souls we have learned New Nobleness, possessed New Heritage."

For what greater gift could we be thankful than that it is given us to keep the faith, to hold high the torch, to give ourselves to the betterment of life with the same glorious abandon as they did—to give our all.—W. H. M., in *Survey*.

Sir William Osler

A great and good man died in Oxford, England, on December 26th, 1919.

Sir William Osler, physician, teacher, scholar and one of the greatest living Canadians, passed away the day after Christmas and left behind him a host of mourning friends in every country in which the English tongue is spoken, and in many parts of Europe. He also left a rich heritage to the profession of medicine in this country, the land of his birth. It is a heritage of high ideals, of courage in adversity, in devotion to the best interests of humanity and of his profession.

Happy will be the young physician of the future who comes under the influence of the spirit which for nearly half a century animated one of Canada's greatest sons.

"Aequanimitas" and "Counsels and Ideals from the Writings of William Osler," are so full of wisdom and of faith, hope and charity that they are almost perfect "silent friends," and every public health worker will be the better fitted for his task, by knowing them intimately.

The Public Health Journal

Vol. XI MARCH, 1920 No. 3

On Ventilation

By J. J. R. MacLeod, M.B., Ch.B. (Aberdeen), D.P.H., (Camb.).
Professor of Physiology, University of Toronto.

INVESTIGATION of the functions of animals is essentially a more difficult problem than that of the physicist or chemist because variable and unknown factors dependent on the life process are involved. The reactions of an animal to changes in the environment are therefore not always strictly predictable, even when we consider only measurable objective phenomena. Many of the problems of physiology consist in a study of the relationship between conditions of the environment and the behaviour of isolated living tissues. These studies are entirely objective in nature. When similar studies are made on the animal as a whole, subjective phenomena also have to be considered, and the results are much less predictable.

The well-being of a conscious animal in relationship to its environment constitutes the main problem of the study of ventilation. In the case of animals living an outdoor life, it is a problem of relatively little importance, but for those like man which spend much of their time in confined spaces, it is a problem of great importance, for in them it becomes necessary to determine the limits within which the outside influences may be altered without detriment to health or comfort. It is the problem which can be solved only by an understanding of the principles of ventilation, and I propose in this lecture to indicate briefly the state of our present-day knowledge with regard to principles, and to show how this knowledge can guide us in the selection of means to improve the conditions in our living rooms and indoor public places.

It is often imagined that ventilation is a matter merely of pure air and that it therefore becomes a problem requiring attention

only in cases where the air has been polluted by the crowding together of many people. It is considered the problem of the ventilation engineer alone and not one that applies in living rooms in which there is no overcrowding. I shall endeavour to show, however, that this attitude is a wrong one, and that there is very good evidence for the belief that much discomfort and ill health could be avoided if people understood more clearly the physical conditions of the atmosphere which bear a relationship to the well-being of the body.

When our knowledge of the function of breathing became developed to the extent of showing that an animal requires the oxygen of the air for the living processes of its body, and as a result of these processes that it produces carbonic acid, which is then added to the air, it was natural to suppose that the unfavourable effect of overcrowded confined spaces was due either to the using up of the available oxygen or to a poisonous action of the carbonic acid. Indeed, it is still the notion of many people that one or other of these changes in the air is the cause of the discomfort of living in crowded places. It is true that a great deficiency of oxygen, such as occurs sometimes in mines because of oxidative processes in the soil, will very quickly cause serious symptoms, often indeed will produce a suddenly fatal result. And a lesser deficiency such as occurs in those unaccustomed to the rarefied air of high mountains, or in aeronautics, is undoubtedly responsible for most of the untoward symptoms classified under the term of mountain sickness. But that O_2 deficiency is not a usual factor in the evil effects of vitiated atmospheres is made plain when we state that even in the most overcrowded room a decrease of O_2 of one per cent.—*e.g.*, from 21 to 20—is practically never overstepped, a decrease which, however, is very much less than that which occurs at altitudes in which, after acclimatization, people live in perfect condition. Many of our best known health resorts and sanataria indeed are situated at altitudes in which the percentage of oxygen is greatly reduced, and there are large cities situated at altitudes of 8 or 10 thousand feet. In Pitosi, a city on the high plateaux of the Andes, the percentage of oxygen calculated at sea level is not more than 12 per cent., a reduction of 9 per cent. below the normal, and yet the people of this city are well and healthy and capable of as much effort as those living at lower altitudes. "Girls dance half the night and toreadors display their skill in the bull-ring."

Clearly, therefore, oxygen deficiency has nothing to do with the evil effects of ill-ventilated places.

With regard to a deleterious effect of the accumulated CO_2, similarly negative results have been obtained. This bold statement may possibly surprise some of you, for no doubt you have known that for a great many years the contrary was believed and that the percentage of CO_2 in the air was taken as the criterion of the adequacy of ventilation. So firmly rooted indeed has this conception become that it has required considerable investigation to overthrow it. Although it has been known to physiologists and hygienists for many years that accumulation of CO_2 has nothing to do with the evil effects of polluted air, it is still believed by the laity to be the really important factor, so slowly does the work of the scientist find its application in the life of the community.

It is not altogether easy to understand why excess of CO_2 was thought to be the important factor responsible for the evil effects of vitiated atmospheres. No doubt the chief reason was that the percentage of this gas is often raised in such atmospheres, but this is nothing more than coincidence, for, on the one hand, most unsuitable conditions may exist when the percentage of CO_2 is normal, and on the other, air loaded with almost a hundred times the percentage found even in the most polluted atmosphere can be breathed for indefinite periods of time without any unfavourable symptoms.

As a matter of fact, even in the open, we are constantly taking into the air sacs of the lungs large percentages of CO_2, for obviously with each inspiration the first air to be drawn in is that which remains over in the air passage from the preceding expiration. This air contains somewhere about 5 per cent. of CO_2, and in quiet breathing it amounts in volume to about one-third of all the air that is drawn in from the outside. This alone indicates that CO_2 *per se* cannot be poisonous, and when we consider further the now well-known fact that a certain amount of this gas in the air sacs is absolutely essential to the well-being of the animal, the whole hypothesis of its toxic action becomes, to say the least of it, absurd. Indeed, so important is the presence of this constant amount of CO_2 in the alveolar air that whenever there comes to be a marked increase in the amount of CO_2 in the atmosphere, the breathing becomes greater, so as to ventilate the air sacs more thoroughly, and thus keep the relative amount of CO_2 in them at the normal level. The extent of this increase in respiration is usually so small as to be unnoticed by the individual, and certainly increased breathing is not one of the symptoms of which persons complain who are living in polluted atmospheres. Furthermore,

not only man, but other animals as well, frequently breathe by choice under conditions which cause great increase in the CO_2 content of the inspired air. "Not only the new-born babe sleeping against its mother's breast, but pigs in a stye, young rabbits, rats and mice clustered together in their nests, young chicks under the brooding hen, all alike may breathe a higher percentage than that legally allowed in spinning mills or weaving sheds." . . . "In breweries the men who tend the fermentation vats work for long hours in concentrations of CO_2 of 0.5—1 per cent. Such men are no less healthy and long lived than those engaged in other processes of the brewery trade." (Leonard Hill.)

In face of such evidence, even the most ardent supporters of the theory that the vitiated air owes its evil influence to CO_2, were compelled to abandon their position, but they did not do so without a final attempt to retain for determinations of CO_2 a certain significance in the appraisement of the healthfulness of air. Their new interpretation was to the effect that the CO_2 percentage is proportional to the amount of deleterious organic matter, and for many years this view prevailed. It is still believed by some that an increase from the normal to 10 parts of CO_2 per 10,000 parts of air indicates a degree of organic pollution which is dangerous to health. More recent work definitely shows, however, that this view also must be abandoned, and there remains for CO_2 analysis only the secondary value that it indicates, in a readily measurable way, to what extent the inside air is being mixed by ventilation with pure air from the outside. However free this dilution may be, the atmosphere may still be deleterious to health and comfort unless certain other properties of it are incidentally altered.

This interpretation of the value of CO_2 analysis naturally leads to a consideration of the next possibility, namely, that the air in confined spaces is contaminated by the accumulation of organic poisons derived from the exhaled air of the persons living in it. It is many years ago now since experiments apparently proving this hypothesis were published. These consisted in placing small animals, such as mice, in a series of glass vessels connected together in series by tubing. Air was sucked through the series so that the animal in the second vessel received air that had been polluted by the animal in the first one, and the third by the first and second, and so on. It was found that the animals in the last one or two vessels of the series died after some time, whilst the others remained perfectly healthy. The original experiments were very improperly

performed, however, and their repetition with proper care to keep down the CO_2 below a concentration which *is* fatal, such as 10 or 15 per cent., has not afforded any evidence that organic poisons were contained in the air.

Some of those who sought for evidence in support of this hypothesis, did experiments that border on the ridiculous, but yet it is important that they be referred to here, since they are sometimes quoted as being trustworthy. These experiments consisted in collecting the condensed vapours of expired air and then inoculating small animals hypodermically with some of the condensed liquid. About 1 c.c. was found to kill a mouse, and, no wonder, since this would mean an injection of something like 5 kg. into a man of average weight. Everyone knows what the injection of so much water would do. Even distilled water is highly toxic in much less amounts when it is injected subcutaneously, and when we add the fact that this condensed vapour was contaminated not only with various salts, but also with bacteria, the result on the mice becomes utterly meaningless.

During more recent years the attempt has been made to resuscitate the old hypothesis by supposing that the toxic substance is of the nature of a volatile protein. When the proteins of one animal are introduced, even in very minute quantities, into another animal in any other way than through the alimentary tract—for example, by being absorbed through the lungs—they set up in the body a peculiar condition, in which the animal becomes so very sensitive to that particular protein that when another minute quantity of it enters the body a serious poisonous reaction which is often fatal results. The phenomenon is called anaphylaxis. It was supposed that in a milder form a reaction of this type was responsible for the toxic influence of vitiated air. As proof for this hypothesis experiments were performed in which a man breathed through a filter of glass wool (to catch any saliva) into a cooled vessel, and the condensed vapour was then inoculated in appropriate dosage into guinea pigs, so as to sensitize them, and a month or so later the animals were inoculated with a minute trace of human blood serum. The injected animal showed decided symptoms of anaphylactic shock, whereas other animals not previously sensitized were unaffected by the injection of the same amount of serum. Such results taken by themselves did seem to afford substantial support for the new hypothesis, but it is almost certain that they depended on contamination of the condensed vapour by traces of saliva which it is impossible to keep out by any kind of filter. This saliva con-

tains traces of soluble protein (mucin) which had been responsible for the anaphylactic reaction. The symptoms are, however, entirely dissimilar from those of a vitiated atmosphere. Hay fever and the reaction which some persons show when near to horses may be due to anaphylaxis, but the symptoms are not at all like those of persons breathing polluted air.

Once and for all, the toxic theory, as we may call it, both in its new and its old form, is disproven by a very simple series of experiments performed a few years ago by Leonard Hill, Flack and others. These observers kept rats and guinea pigs in deep boxes so that they were huddled together in a very poorly ventilated place, the atmosphere of which indeed often contained 1 per cent. of CO_2 —ten times more than the legal limit. The animals lived and thrived for months, although they must have been breathing air which was highly contaminated by the supposed volatile proteins. Not only did the animals show no symptoms while in the box, but they failed to exhibit any anaphylactic reaction when, after some time, they were inoculated subcutaneously with the serum of animals of the other species with whom they had been in cohabitation. This was really a most excellent test of the anaphylactic theory because there are probably no two animals in which anaphylaxis is more pronounced than in the rat and guinea pig. The only things that were found to be of importance in maintaining the animals in a thriving condition were cleanliness and plenty of food.

By an eliminative process we are gradually approaching the correct solution of our problem, but before we proceed to consider this, it may be well to remark that the odour of polluted air has nothing whatever to do with its unhealthy influence, except in so far as it excites disgust and puts one off his appetite. Indeed, one very soon becomes so accustomed to these odours that they fail entirely to be sensed after a short period in contact with them. Their influence is entirely psychological. In many trades and occupations people are constantly exposed to odours that are almost unbearable to one who is unused to them, and these people are perfectly healthy, and, indeed, do not complain at all of the smells.

We have so far considered in what is approximately their chronological order the various hypotheses that have been brought forward to account for the harmful influence of vitiated atmospheres. We have done this mainly in order to correct any false conclusions that may still exist in connection with the subject.

And if further evidence be demanded to justify this position there is one crucial experiment which once and for all shows that

changes in the chemical composition of the atmosphere has no relationship whatsoever to the unhealthful influence of vitiated air. This experiment is all the more convincing because it was performed on healthy young men. In its simplest form it consists in crowding as many persons as possible into an air tight cabinet, provided with an electric fan, and with the necessary apparatus for measurements of the physical and chemical condition of the air. In describing the results of this experiment, I cannot do better than quote from Leonard Hill, who, though not the first to perform the experiment, has so greatly extended our knowledge of the science of ventilation during recent years.

"After 44 minutes the dry-bulb thermometer stood at 87°F., the wet-bulb at 83°F. The carbon dioxide had risen to 5.26 per cent. The oxygen had fallen to 15.1 per cent. The discomfort felt was great; all were wet with sweat and the skin of all was flushed. The talking and laughing of the occupants had gradually become less and then ceased. On putting on the electric fans and whirling the air in the chamber the relief was immediate and very great, and this in spite of the temperature of the chamber continuing to rise. On putting off the fans the discomfort returned. The occupants cried out for the fans. No headache or after effects have followed this type of experiment which has been repeated five times." Long before the discomfort had become extreme the oxygen percentage became so low that matches would not light. The disinclination to smoke cigarettes was not noticed until some time after it was impossible to light them.

In other experiments of similar type the person in the cabinet was allowed to breathe outside air through a tube, but with no amelioration of the uncomfortable feeling, or a person outside the chamber breathed for hours the air inside it through a tube without suffering and discomfort. Clearly, therefore, neither the chemical nature of the air, nor the presence of toxic substances in it, has any relationship to its evil influence. But the experiment is not merely destructive of previously held hypotheses; it also points the way to the true solution of the problem, for it indicates that stagnation of air loaded with moisture has some very close relationship to the discomfort. It shows that a change in the physical, rather than the chemical properties of the air is the real cause of its deleterious action.

These changes can affect but one function of the body, namely, that of heat dissipation, and by so doing cause disturbances in the mechanism of heat control. This does not necessarily imply that

this disturbance is so great as actually to cause an increase in the body temperature, although this is very commonly observed in persons who have been for some time in crowded places. It indicates interference with a mechanism which is responsible not alone for proper heat regulation, but also for the maintenance of a proper relationship of blood supply to different parts of the body, and for toxic stimulation of the nervous system.

At this stage it may be well to digress for a moment to explain how the body temperature is maintained. To a certain extent the mechanism is exactly that of a radiator, the temperature of which depends, first on the rate at which the furnace is burning and second, on the cooling influence of the air in contact with the radiator. The physical properties of the air upon which the cooling depends are those which influence radiation, conduction and convection. Now, turning to the body, these processes come into play mainly at the surface of the skin, where, however, excessive loss is guarded against partly by the low conductivity for heat of the skin and of the subcutaneous tissue (fat), and partly by the fact that the blood supply to the skin is scanty compared with that of the deeper tissues. This causes the blood flowing in the skin to have a decidedly lower temperature than that in the tissues a few millimeters deeper. This relationship of superficial and deep temperatures is maintained by the action of vasomotor nerves to the blood vessels, and whenever the body is exposed to warmer air, the vessels of the skin become dilated so as to draft more blood from the deeper to the superficial vessels causing flushing of the skin. Flushing of the skin is therefore a normal reaction, but at the same time it is a warning that the heat-regulating mechanism is being put on a strain. But it is inadequate to account for all the heat loss, for man can withstand temperatures that are not greatly below those of his body, indeed, he can tolerate for some minutes temperatures that are higher. It is recorded, for example, that two observers exposed themselves for a short time in an oven in which a steak was cooking, and it is well known that certain miners work for considerable periods at very high temperatures.

Evidently some other mechanism independent of the cooling effect of air itself, and not acting in the case of a radiator, comes into play. This is evaporation, and it occurs at two places in the body; at the surface of the skin, where sweat is evaporated, and in the lungs where the expired air is saturated with water vapour. The physical factors which control the degree of heat loss by evaporation at these two places are not precisely the same. In the

case of the lungs the inspired air becomes saturated with water at body temperature, and the amount of evaporation necessary to do so depends upon the amount of water already contained in the inspired air, that is, on the absolute humidity; the lower this is, the more water will it require to effect saturation.

In the case of the evaporation of sweat, the amount of moisture vapourized from the body depends on the relative temperature and the humidity of the atmosphere.

It may be well to digress for a moment to explain what is meant by these terms relating to humidity. By absolute humidity is meant the weight of water contained in a unit volume of air. This increases greatly with the temperature of the air; thus at 70°F. one cubic foot of air contains 7.91 grs. of water. Relative humidity, on the other hand, means the degree to which the air is saturated with moisture at each temperature; thus, a relative humidity of 75 at a temperature of 70°F. means that it contains 75 per cent. of the total of 7.91 grs., which, it would contain if saturated at this temperature.

Now, inasmuch as the air after expiration is at about the same temperature as the body, and is practically saturated with moisture, it follows that the main factor influencing loss of heat by this means will be the amount of moisture actually present in the inspired air. If this be nearly at body temperature, 97°F., and dry, each 100 c.c. will take up .00413 gm. water in the lungs; if it be at average room temperature (say 68°F.) and dry, it will take up just exactly the same amount to become saturated with vapour. Some heat, it is true, will also be required in this latter case to raise the temperature of the air itself, but this is small when compared with that required to hold the water as vapour, since air warms up easily, or, to use the scientific term, has a low specific heat.

The amount of heat dissipated from the body of man by this means in an ordinary living room is about 10 per cent. of the total loss, but it becomes relatively much greater when the air is dry, and especially when the breathing is increased. On the other hand, when the humidity of the outside air is great and the temperature high, little heat loss occurs through this pathway.

Under ordinary conditions of living somewhat less heat is lost by evaporation of the sweat, and the factors which mainly determine it are the temperature and the relative humidity of the atmosphere, provided the temperature be above a certain level.

It is in connection with this phase of the subject, more than any other, that many people find it difficult to understand the true sig-

nificance of relative humidity to the well-being of the body. The difficulty depends on the fact that the relative humidity has an opposite influence at low and high temperatures. In the former case it increases the conductivity of the atmosphere for heat and has a cooling influence, and in the latter it interferes with the evaporation of sweat, and has a heating influence. Below about 65°F. the cooling effect of moist air is prominent because there is little sweating, therefore a cold, wet atmosphere is chilling—it conducts heat away. At about 70°F., the cooling effect of air disappears and sweat occurs. The evaporation of the sweat now causes cooling, the degree of which varies inversely with the relative humidity. Between these two temperatures, *i.e.*, 65 and 70, there is a range in which humidity has little influence—a neutral region. The influence of high relative humidity on bodily comfort at temperatures above the neutral temperature becomes very marked indeed at 85°F., and a relative humidity of 90%, for example, very serious symptoms appear in a few minutes, when there is no movement of the air.

Relative humidity and temperature alone are not, however, the only physical conditions to be considered. Another is the movement of the air, for even under the unfavourable conditions just cited immediate relief is afforded if an electric fan be started, as it will be recalled was the result in Hill's experiment. The temperature in the cabinet was 87°F. dry bulb, and the relative humidity very high indeed when the symptoms became serious; by turning on the fan these conditions of the atmosphere were not altered, but the students immediately felt comfortable. The movement of the air enables it, though nearly loaded to its full capacity with moisture, to carry away considerable quantities in small loads.

The wearing of clothes greatly affects the rate with which these changes occur. The clothes act as barriers preventing the movement and exchange of air around the body. The garment next the skin entraps a layer of air which is more or less at the same temperature as the skin, and which soon becomes saturated with moisture at that temperature. Between the inner garments and those over them other layers of air are entrapped, each one being at a somewhat lower temperature and containing less moisture than the one inside. These layers of air, therefore, form stepping stones as it were between the extreme conditions at the surface of the skin, and the environment of the clothed body. Obviously if the layers of air next the skin are to be renewed at such a rate that they remain cooler than the skin and unsaturated with moisture the clothing must be adjusted to suit the outside conditions.

There is every reason for believing that it is because of interference with these processes that improperly ventilated and overcrowded places are uncomfortable. The moisture exhaled and evaporated from the bodies soon raises the relative humidity so that heat loss is retarded from the skin, and the heat that is actually given off raises the temperature so that loss from the body by radiation and convection becomes suppressed. As the temperature steadily rises, the air takes up more and more moisture, with the result that less and less heat comes to be lost from the lungs in saturating the expired air with vapour. The physical conditions of the environment become unsuitable for the physiological mechanism of heat loss, although meanwhile heat production goes steadily on. The body furnaces are not damped down in proportion as the loss of heat diminishes, and the consequence is a rise in the temperature of the blood—a mild fever. Now it is well know that the cellular activities which, taken together, make up the life process of the body are extraordinarily sensitive to change of temperature; their chemical processes become changed, they demand more oxygen, they fail to get rid of effete products properly, substances which have no action on them under the ordinary conditions of temperature become toxic, and so forth. A highly abnormal internal environment therefore becomes created around the living tissues of the body.

But short of a measurable rise in the temperature, improperly ventilated places cause reactions in the human body that are responsible not only for the discomfort which is experienced, but also for a lowering of resistance to infections. These reactions are due in the first instance to alteration in the temperature differences between the skin and the underlying tissues. Normally, as has been remarked before, this difference maintains at the skin a constant stimulation of the thermic nerves, and this stimulation is important in maintaining the tone of the nerve centres. The nerve cells that control the functions of the body do not originate impulses; they only act when other afferent impulses arrive at them. There are many varieties of stimuli which may excite these afferent impulses, but none more important than those which excite the heat nerves of the skin. This stimulation depends on changes in the rate at which heat is passing through the sense organs in which these nerves terminate. It is necessary to emphasize that it is the rate of change that acts as the stimulus and this depends on changes set up between the deep and superficial temperatures. When the skin vessels become dilated so large a volume of blood reaches

the surface that this difference becomes slight and the thermic receptors are not stimulated. There are many practical applications of these principles, thus it is because of stimulation of the thermic skin nerves that cold baths have a bracing effect, that the open air treatment, as in tuberculosis, tones up the body and enables it the better to hold its own against the tubercle bacillus and that sleeping out of doors is the best tonic for maintaining good health. In open air treatment it is true that the body is closely wrapped up—that is essential—but this does not eliminate the cooling influence, for not only does the cool air play on the exposed face and hands, in the skin of both of which the thermic nerves are very sensitive, but it acts also on these nerves in the skin, under the clothes, for the clothes merely serve to regulate the rate of cooling. This still goes on very much more than it would with much less clothing in an atmosphere that is stagnant, hot and humid. Open windows in bedrooms are never so healthy as open air porches, because there is no draft. It is the draft that is important. Naturally it must be regulated so that it is not restricted to one part of the body only—that obviously would introduce conditions to which the body is unaccustomed—it must blow equally all over. There is probably no greater fallacy in popular hygiene than that drafts are dangerous. Like all good and desirable things they become so only when they are improperly used. When a person, overheated by being in a hot atmosphere, is suddenly subjected to a restricted draft of course there is danger that the sudden change of conditions, affecting one part of the body only, will cause vascular disturbances that may be undesirable, but if the conditions be properly controlled, drafts are the healthiest things and the best tonics.

This brings us to a problem in ventilation that is attracting very considerable attention at the present time, namely, the relationship between ventilation and infections. It is a common experience not only that ordinary colds, but more serious infections as well, can be directly traced to some unsuitable condition of ventilation; such as sudden exposure to a draft while overheated, or going out into a cold, damp atmosphere from an overheated room. What is the reason for the infection under these conditions? At the outset we must recognize that all these conditions, colds, catarrhs, bronchitis, just like the more acute infectious diseases like diphtheria, pneumonia, cerebro-spinal fever, etc., are due to micro organisms, and the question therefore is why should unfavourable ventilating conditions so frequently be the immediate cause of the attack.

There are two methods by which the infection might occur. First, by a great increase in the number of organisms in the air, and, secondly, by a lowering of the resistance of the body towards the organisms, which would not then require to become increased in numbers. The former method is usually known as mass infection, and there can be no doubt that it is very common, perhaps, indeed, it is the commonest cause for infection. The organisms, of course, come from infected individuals, who add them to the atmosphere in the exhaled air, particularly when this is forcibly discharged as in coughing, or sneezing, or even in speaking.

I need recite to you only a few observations to convince you of the importance of this factor. If the mouth be rinsed with a culture of some readily recognizable organism not commonly present in detectable amounts in the atmosphere, and the person, standing in front of a row of plates each containing some culture medium upon which the organism will grow, then speaks at ordinary pitch, the plates after proper incubation develop colonies of the organism, those nearest the speaker having most, but even those at a distance of several feet also showing them.

A serious problem in zoological gardens has been to keep animals that are highly susceptible to tuberculosis free from this disease. The higher apes, for example, inevitably succumb to this disease, being infected by the bacilli exhaled by persons standing in front of their cages, many of whom harbour the tubercle bacilli, though they may not show any of the symptoms of tuberculosis. Now it has been found that if glass screens are erected in front of the cages the animals remain almost free from the disease. The lesson which these and many other similar observations teach is that we should avoid as much as possible getting in the direct path of the exhaled air even of apparently normal individuals, and when an infectious disease is prevalent, it should not be considered rude in conversation to stand aside a little and even to hold the hand, or better still, a newspaper, before the mouth. This may seem impracticable advice. But why so? In the light of such convincing experiments as those which have been cited above, and they are only two in a multitude—why should people not be more careful about being infected, especially during dangerous epidemics such as that of influenza. The thing to bear in mind is that a person may be harbouring the deadly bacteria and yet be in perfect health. The bacteria that are inocuous to him may find in another person more favourable conditions for growth, and so produce the disease.

But mass infection does not suffice to explain the cause for the onset of attacks of many conditions that are nevertheless fundamentally due to bacteria, such as ordinary colds. These can frequently be traced to some chill, or wet feet, or exposure to sudden change in temperature. In such cases it is believed that the bacteria are present on the mucous membranes of the upper respiratory passages, but that they remain inactive because of the normal protective influences which exist on these surfaces. So long as the blood supply is normal, these protective influences are adequate to protect the body from invasion, but if this should become curtailed, then the bacteria become active and set up pathological processes. Evidence favouring this view has been obtained by several recent investigators by finding that the blood supply of the upper respiratory passages becomes decidedly curtailed when the surface of the body is cooled. For example, Leonard Hill and Muecke some years ago examined with a speculum the mucous membranes of the nose under various conditions, particularly out of doors, and in rooms which were ventilated and heated to an average degree. Out of doors the mucosa was pale and taut, and when touched by a probe did not show any pitting. This is the normal condition. Indoors it was common to find the membrane decidedly swollen, flushed with blood and covered with thick secretion, and when a probe was pressed on it a depression resulted lasting for some time. In one case that was frequently examined during these observations there was a deflected septum which only partly blocked the nasal passage on one side when the person was outside, but which did so completely under unfavourable conditions of ventilation. It is this swelling of the nasal mucosa and probably of that of the cavities which extend upward from it on to the forehead that causes the sense of stuffiness and probably also the headaches which are common in crowded, over-heated places.

The conditions found to bring about these changes with greatest certainty were when the feet were cold and the air round the head was warm, conditions which are just exactly the opposite of those obtaining out of doors. Here the head is usually more quickly cooled than the feet, because convection currents of cool air play around it freely, whereas next the ground the air is more stagnant. Besides, if the sun is shining, the earth becomes heated by absorbing the heat. The temperature as registered by a thermometer, either wet or dry bulb, may be the same at the feet as at the head. It is not this that counts, however; it is the rate of cooling which is dependent, mainly, on the movement of the air. Now, in a poorly

ventilated room, such, for example, as one heated by a stove, or even by radiators, and in which there is no movement of air, the feet become colder than the head, and it is under these conditions that the nasal membranes become swollen. Leonard Hill, to illustrate the importance of these principles, cites an interesting observation which he made in the House of Commons. In the main chamber "the ventilating current is driven up through the floor in such a way as to cool the members' feet, while their heads are exposed to more stagnant air. Cold feet and stuffy heads result—just the wrong conditions for legislators." The thermometer shows a uniform temperature, but the Kata thermometer, which we will describe shortly, shows the cooling rate to be 40% greater at the feet than at the head level. Hill states that he always experienced obstruction of the nose, because of his deflected septum, when he sat on the benches, and that this disappeared when the air coming through the floor was cut off and the air was introduced at the head level. The cause for these changes is not cold feet alone. It is the combination of cold feet and hot head. Out of doors, it is well known, that any one may stand with cold feet for hours without any risk of catching cold, but then the head is really cooling as fast as the feet, because of convection currents.

The ideal system of warming a room is to supply radiant heat near the floor level; open fires, properly flued modern gas fires, and electric heaters at floor level are the best methods to attain this. Steam heated radiators, especially if they are provided with vapourizers, are not desirable methods for heating unless the air of the room is frequently changed at high levels.

Suppose now the person subjected to conditions which cause the mucous membrane to become swollen and congested should go outside, then the membrane at once becomes pale because the blood vessels constrict, but for some time it remains swollen and boggy and continues to show pitting with a probe. It is while in this state that it offers favourable conditions for the growth of bacteria. The membrane is swollen and covered with secretion, and the blood flow is cut down. The natural defensive agencies that are normally carried by the blood do not succeed in combating the multiplication of the bacteria in the swollen membrane. After some time out of doors the blood supply returns because it is required to warm up the cool air, but this reaction does not occur before the mucosa has regained its normal condition.*

*The congestion of the mucous membrane brought about by warm, moist air, does not probably depend on dilatation of the small arteries—entailing increased flow of blood, but rather on dilatation of the capillaries, and therefore a stagnation of blood.

The protective influence of a rapid blood flow through the nasal membrane is possibly the explanation of the relative immunity from infectious colds of those who work in air containing irritating gases, such as workers in various kinds of chemical factories. Even the irritation set up by coal dust may, by similar methods, afford some protection against infection by the tubercle bacillus—for phthisis is relatively infrequent amongst coal miners. The supposedly antiseptic action of ozone is probably due to a similar irritating effect. Any benefit that may be derived from its presence in the atmosphere cannot otherwise be explained. It is possible that a useful prophylactic practice to avoid infection, such as that of influenza, would be to stimulate the nasal mucosa at intervals by snuff, but this may be an unwise suggestion.

After becoming acclimatized to outdoor conditions the nasal mucous membrane is in a much more favourable condition to withstand infection than indoors, because of the very rapid blood flow that is necessary in order to supply heat with which to warm up the inspired air. This more rapid blood flow, and the freer flow of lymph which accompanies it, is reinforced by increased secretion, which assists to wash away invading bacteria. Mass infection being equal inside and outside, the animal body can withstand it much less satisfactorily in the former case.

These observations on the reactions of the respiratory membranes to atmospheric conditions have been confirmed by other investigators. Thus Cock (H. Girard Cock, Tr. Am. Laryngol. Rhinol. & Otol. Soc. June, 1915) caused persons to breathe forcibly through the nostrils on to a mirror surface, and then marked on it with a wax pencil the outlines of the moisture deposited. Although the extent of the outlines varied somewhat with the depth of breathing, they afford a general estimate of the width of the air passage. It was found that there is marked reduction in the nasal air passage in a warm room. Winslow (Winslow, C.E.A., New York Commission on Ventilation) also sums up the observations (150 in number) made on this aspect of the problem, in the following words: "Ordinarily it was found that heat causes a swelling of the inferior turbinate of the nose, tending to diminish the size of the breathing space, increased secretion and reddening of the membranes. The action of cold is, as a rule, just the opposite."

Many other observations bearing on the relationship between chilling and immunity to infection have been recorded, but it would take us beyond our subject to discuss them here. Because of their accuracy and the excellent control of possible fallacies it is import-

ant, however, to say something about the recent investigations of Mudd and Grant (Mudd, S. and Grant, S. B. The Journ. of Medical Research, XL., p. 53, 1919). These observers measured the temperature of the mucous membranes of the palate, tonsils and pharynx by means of thermo-couples before and during application to the skin of cold towels, or while cold air from a fan was allowed to play on it. A rise in temperature would indicate that the part had become more vascular, and a fall, the contrary. That this interpretation was the correct one was confirmed by direct inspection of the degree of flushing (redness). It was found that chilling the body surface immediately caused a fall in the temperature of the mucous membranes which could not be accounted for by any accompanying change in blood pressure, or, entirely at least, by changes in respiration or by lowering of the temperature of the blood. The conclusions are "that chilling of the body surface causes reflex vaso-constriction and ischaemia in the mucous membranes of the palate, faucial tonsils, oropharynx and nasopharynx."

And now the final question presents itself, what are the ideal conditions of ventilation? It is a most difficult question to answer, and one over which at present several large commissions are at work. Indeed, most elaborate experiments have been planned and undertaken to throw light on the question. The observations of the New York Commission on Ventilation, by Mr. Watt, in the Graham School in Chicago, are among the most important in this country, and, of course, they interest us much more directly than those conducted on the other side, where the climatic conditions are fundamentally different.

The observations have been made very largely on properly selected groups of school children, taught in class-rooms with different ventilating conditions. Attention is directed to the general efficiency of the pupils and the condition of their health. The temperature, and the humidity of the air are the physical conditions of the atmosphere which have been more particularly studied, but a great deal more work must be done before any definite conclusions can be offered. It appears, however, that for schoolroom air a temperature of 65-68°F., with a relative humidity of 45-60% is the optimum. To maintain these conditions throughout the period a class occupies the room, usually requires, in this country at least, the addition of a considerable quantity of moisture to the ventilating air. The air of most of our school rooms in winter errs on the side of being too dry, for under these conditions the mucous mem-

branes suffer injuriously. An excellent summary of the various authoritative conclusions with regard to the optimum conditions of ventilation for class-rooms is given by Burnham in the *Pedagogical Seminary* (Burnham, W. H., *The Pedagogical Seminary*, 1919, XXVI., p. 311).

Although the present review does not venture to discuss the methods that are employed for the measurement of the various physical properties which have to be considered in gauging its influence on health, nor the engineering problem of how ideal conditions may be maintained, it may not be out of place to mention, in connection with the former of these, that the physical property to which most attention should be devoted is the cooling power. This cannot be done by reading an ordinary thermometer, for this instrument only registers the temperature of the piece of wood and of the wall against which it is hung. It registers the same whether the air is dry or moist, or whether it is stagnant or moving. Somewhat more information regarding cooling power is afforded by readings of a wet-bulb thermometer, an instrument in which the bulb is kept constantly moist, so that evaporation occurs from it. This evaporation tends to cool the thermometer, in proportion to its rate, and since this is dependent mainly on the degree to which the air can take up more moisture, we can tell by the use of a formula or tables the relative degree of humidity of the air. Still this does not tell us the real degree of cooling which the atmosphere can bring about. It does not adequately register the cooling which is dependent upon movement in the air, the so-called convection currents. To afford this information Leonard Hill has invented what he calls the Kata thermometer, by which the rate of cooling is directly measured. The instrument consists of an alcohol thermometer with a relatively large bulb, and with the scale registering between 105°F. and 90°F. It is placed in warm water at about the former temperature, and is then removed, and the time required for the temperature to fall from 100°F. to 95°F. is measured by means of a stop watch. This time divided by a factor determined for each instrument, and written on the stem, gives the actual amount of heat in millicalories per square centimetre per second which would be given off from, say, the surface of the human body, under similar environmental conditions. Hill and his associates have shown that much important information concerning the cooling power of the atmosphere can be gained in this way, which cannot be gained by any other.

"Recreation as a Public Health Measure"

By A. B. Dawson, B.P.E.,
Physical Director, Y. M. C. A., Halifax, N.S.

Association of Medical Health Officers of Nova Scotia, July 1, 1919:

In the subject assigned to me for discussion this evening there appears to be dual possibilities—on the one hand, that the title contains a challenge and that an attempt should be made to advance proof for the bold inference that Recreation *is* a Public Health Measure. On the other hand, I might overlook such an inference and simply endeavour to relate or review some of the outstanding phases of Public Recreation and Physical Education which have been conceived or revived in modern times with a view of contributing to that great objective—The Public Health.

Surely in such a gathering as this, in the presence of the Medical Health Officers of this fair province, the first proposition would be entirely unnecessary: indeed, an unpardonable waste of time.

Instead of quoting lengthy statistics, prominent authorities, and outstanding statesmen or advancing convincing arguments to establish the premise, I shall simply and arbitrarily consider the statement that Recreation is a Public Health Measure in the light of a truism.

New Pronunciation, with New Emphasis.—The word Recreation is not a new one, though it has recently taken on a new pronunciation, in professional circles at least. This new pronunciation is, I believe, indicative of a larger conception and a fuller appreciation of the physiological fact implied "re-creation." Not so many years ago, when we said recreation, referring perhaps to athletic contests where supervision or control was lacking, "wrecks" were, I sadly fear, too often the result, and the old pronunciation was therefore quite fitting, indeed prophetic. With the newer emphasis on *leadership* and *supervision,* has come the change.

Instinct for Play.—Recreation for the people is a vital problem for every city, every town, and, indeed, every community. The instinct for play is universal. This instinct may and should be made a mighty force in producing *physical fitness*, in *advancing education* and in stimulating *national life.*

A soldier, an original of the 1st Canadian Division of the C. E. F., who returned to Canada a few weeks ago, in a conversation that I had with him advanced this idea. The government, by legislative act, has closed the saloons—which he approved—but, he argued, it has not provided a substitute. It is the duty of the government to provide a social centre to take its place and the best substitute is the supervised and equipped playground and the community centre. That seems fair and right, and I confess I had no argument.

Man Power and Woman Power.—But—speaking about soldiers—shall we forget the experiences and the lesson of the last five years? What a shock it was to England, France, Belgium, Italy, Canada, and later to the United States, when the youth of these nations was being counted with feverish anxiety. Upwards of thirty per cent. physically unfit. A revelation which might well make these nations look back with shame on the neglect of their youth in the days of peace.

Now, the strain on our human resources is over. Only three days ago the Peace Treaty was signed. That insistent and terrifying demand for men, sound men, men physically and physiologically fit, is gone. But will we forget? Will England, France, Belgium, Italy, the United States, and Canada forget? May it be said that the war being over we are no longer nationally concerned with our youths? Will it be true that these human resources are precious only for the purpose of war? The preparation of youth for the battles of maturity is surely as important for peace as it was for war. The need for vigorous, healthy, and long-lived men and women is certainly as important for to-morrow as it was for yesterday.

If thirty per cent. of the young men between the ages of twenty-one and thirty were unfit for military service they were equally unfit to render full measure of service in any capacity; therefore, unable to get full returns from life in work and happiness. It is quite fair to suppose that a similar percentage of women similarly suffer from disqualifying defects.

What about the boys and girls of school age in Nova Scotia—children six to eighteen years now marching along the great highway of youth. Can it be said of them, as it is of the children in some of the States, that at least fifty per cent. of these have defects and ailments that impede normal development in greater or less degree; that they live, at home and at school, in conditions more or less unhygienic; that they lack that positive physical education—

play, athletics, gymnastics, work—necessary to realize their potential man and woman power.

Physical Education Legislation.—England, appreciating a deplorable physical condition of her youth, has included in her plans for reorganization of her educational system extensive provision for compulsory physical education.

In France there has recently been appointed, under government direction, a National Committee for the development of Physical Education.

In the United States, State and Federal legislation is being secured in a coast to coast campaign for National Physical Fitness. This legislation interprets physical education in a broad and true way, as understood by the most competent experts in school administration and in physical education. It assumes physical activity as the basic thing, but conditioned upon, and integrally related with, wholesome physical environment, individual examination and record, development of health habits and instruction in health knowledge, hygienic school management and co-operation with all agencies that make for physical upbuilding and the moral growth inevitably incident to sane, wholesome, active, physical life.

This legislation provides for boys and girls alike, recognizing that the physical upbuilding of women is equally important with that of men.

In a letter received three months ago from Mr. E. Dana Caulkins, manager of the Physical Education Service, Washington, D.C. (which is conducted by the Playground and Recreation Association of America), I learned that twelve States had already enacted physical education laws, namely, New York, New Jersey, Illinois, Rhode Island, Nevada, Maryland, Delaware, California, Washington, Oregon, Utah, and Montana. At that time, in the following eleven States, physical education bills had been introduced, with fair prospects of passage: Indiana, Oklahoma, North Carolina, Tennessee, Kansas, Missouri, Colorado, Michigan, Maine, Massachusetts, Pennsylvania. These laws provide for the levying of taxes and the preparation of teachers for the carrying out of a thorough and effective system of physical education. The programme and syllabus now operating in the State of New York, for example, requires six hours a week in physical training from every pupil who comes under the provision of the law—that is, all the children, male and female, above the ages of eight years, in all elementary and secondary schools, and in all private schools. The number of hours required varies in the different States.

I am stating these facts with a distinct purpose. I am a Canadian. Prouder to-day in the knowledge of that fact than in all my possessions. But I do not like to see Canada in any other than first place in any race. The race in re-organization and reconstruction is on among the nations. We see England—the United States—France—adopting as a primary need compulsory physical education programmes. But where is Canada in the race? When the starting gun was fired and the Great War was on (and seemingly the only thing that mattered) Canada was away in the first heat. She won everlasting distinction and honours; for who can escape that thrill of pride when we think of the Canadians being picked by that peerless Marshal as the storm troops of the Allies in that last great advance! Think of the training and conditioning of these men: the physical training syllabus (not always enjoyed by the men, it is true, because of the prosy and perfunctory methods employed) the bayonet fighting and the whole routine of vigorous out-door experience—what a change was effected. This same development in physical strength, co-ordination, control, and will-to-do must result from any properly prescrible system of physical education, whether for children or adults. But why wait for an alarming emergency—yes, why? May I make bold to suggest that among the many important and timely resolutions which you may pass in this conference that one, recommending the enactment of provincial and federal legislation for the purpose of providing sane, compulsory physical education in Canada, be among them.

Play.—But after school hours and after work, there are still many hours of leisure. Roughly, the day, for most people, is divided into three periods of eight hours each—eight for sleep, eight for work and eight for leisure. The way that the individual spends that leisure time is of vital importance both to him or herself and to the state. The play instinct has been referred to as universal. Most people would play if they had the opportunity. There is little to do now in the larger centres but seek amusement. Amusement and play must not be confused. Play is essentially educational, and recreative, and, when wisely supervised and directed, must surely be physically beneficial and uplifting morally. *Amusement* may be made educational, but frequently is not. Play is the chief desire of childhood and youth. A child deprived of play loses one of the greatest factors in its education, and it is doubtful if it can develop normally.

Playground Movement.—The recognition by psychologists and

educators of the immense importance of the play instinct has led in comparatively recent years to a marvellous growth in what is called the *playground movement.*

Particularly in cities, and especially in the largest cities the modern playground is as essential as the school, the church, or—if you will pardon me—the medical health board.

Usually municipally owned and controlled, sometimes, where the municipality has not caught the importance, privately owned, or as is the case in Halifax, partly municipally and partly privately supported, these playgrounds are a very Godsend to thousands upon thousands of the children and youths of these communities. They are veritable bee-hives of activity and the product turned out is undeniably a better, healthier, happier citizenship.

A Modern Playground.—Picture to yourself this scene on the old dumping ground in Halifax, known as the Central Common—now the Central Playground. It's a hot afternoon in July, the shadeless streets in the poorer sections of the city are deserted. The erstwhile dump is swarming with young life. There are eight small punts carrying four to six precious kiddies plying on the old willow-lined Egg Pond. A lady teacher is directing their movements and the crews are changed at intervals. Scores of youngsters, knickers and skirts rolled well up are wading barefoot about the edges of the pond, and sailing boats. There are nine baby hammocks hung on frames in sets of three each holding a tiny baby, fast asleep in the shade of the willows, mother or sister keeping watch near by. There are twelve box chair swings for the toddlers, each full and other waiting their turn. Two metal slides have a never-ending stream of coasters. Eight see-saws are never at rest. Twenty-seven full-length swings of steel construction are in constant demand by the older boys and girls. Two teeter-ladders are tilting at full speed and bidding farewell to the possibility of round shoulders, as are the glorious giant strides that are whirling around next to them. The sand boxes are alive with three to six-year-olds building all the wonderful things that imagination can devise. The older boys are practicing on the horizontal bars, the parallel bars, travelling on the rings or the horizontal ladder, vaulting over the horse or the buck. Older girls are playing at either tennis, newcomb, baseball, basketball, or engaging in some rollicking, boisterous group game. Baseball and basketball and volleyball each has claimed the favour of a group of boys on their respective courts. And all this going on harmoniously, because of

supervision. A teacher here and there is directing things. Older girls and boys who are acting as leaders are faithful in their duties —*and it's free!*

Four other playgrounds in the city are carrying on a similar programme, only on a smaller scale, because of inadequate space. Now, the question is, why is this not municipally supported in Halifax? Why is it that supervised playgrounds are not found in every town and village in the Province? Aside from any health consideration, the playground is the most democratic institution on this continent. If the Great War was fought to make the world safe for Democracy—why do we delay in adopting this widely proven and universally approved method of developing it.

Recreation Facts.—Just a few statistics—Recreation facts—from the last year book or annual report of the Playground and Recreation Association of America:

403 cities in the United States and Canada last year maintained 3,871 playgrounds and neighbourhood centres under leadership.

30 cities initiated an organized programme in 1918.

8.137 paid workers directed the recreational activities of America's children and adults.

787 playgrounds and recreation centres were open during the entire year.

In greater numbers than ever before working boys, girls, and adults attended evening recreation centres. A total expenditure of $4,891,606.00 was reported by 380 cities—of this total $2,306,-500.91 was expended in 348 cities for salaries.

In any consideration of the playground movement it must ever be remembered that the play leader or director is of far more consequence in the securing of results than is the equipment.

Economical Side.—While we are discussing recreation from a health standpoint, there is a very interesting argument advanced on the *economical* side which I will only suggest.

The migration from Noval Scotia to New England and to Western Canada, which has been going on for years, is taking from this province much of its most potential resources in brain and brawn. Many of these Nova Scotians are making names for themselves in other places. Must this province go on indefinitely contributing to the upbuilding of other cities, or can we do something through the developing of the play life of the province to hold the interest of these young people and secure for them the degree of happiness which they desire. The State of Maine made a similar discovery

and has recently applied this remedy. The results will be interesting.

Recreation for Adults.—Recreation for the adult is quite as important as for the child or youth. Skating, skiing, snow-shoeing, tobogganing, curling, hockey, canoeing, swimming, diving, water polo, track and field sports, tennis, golf, rugby, soccer, baseball, lacrosse, field hockey, basketball, volleyball, handball, bowling, boxing, wrestling, fencing, mountain-climbing, etc., all have their own peculiar appeal, and if indulged in sanely must surely have a beneficial result. Excess in any may bring disaster. The great difficulty about most of these avenues of recreation has been that they have been out of the reach of the ordinary young men and women. That condition is changing. Play and recreation must be a possibility for all. There should be no place for the aristocratic athletic club in our newer democracy. A regrettable feature in modern recreation is the creation of the high class spectacle and the resulting development of the professional athlete. The public is undoubtedly to blame for this. Play has frequently lapsed into unwholesome amusement and instead of benefit comes the reverse.

Happiness is what we all seek. Health—abundant health is a primary requisite. It cannot be purchased for money. It is not put up in bottles.

Recreation is undoubtedly the antidote to old age—a man, especially, is as old as he feels, and the way to feel young is to recreate.

The Mentally Deficient in Ontario

Mr. Justice Hodgins' Recommendations.

The Public Health Journal has received a copy of the Report on the Care and Control of the Mentally Deficient and Feebleminded in Ontario, by the Hon. Mr. Justice F. E. Hodgins, Commissioner appointed by the Ontario Government. This valuable report, which has just been issued in printed form, deals with the subject in a most exhaustive manner, and the information which it contains should prove of great assistance in solving a most acute problem. The general recommendations made by the Commissioner are published for the benefit of our readers.—Ed.

Recommendations.

In making recommendations for the practical application to the conditions of our Province of the foregoing conclusions and the various considerations which have been presenting themselves in this report, I am desirous of suggesting what can be accomplished without casting an undue burden upon the finances of the Province or on its municipalities. At the same time a well-defined objective and the means necessary to reach it are indispensable.

If the matters elaborated in the report are treated as indicating the general line to be followed in dealing with a most important social reform, it will be apparent therefrom that the information and education of the public are indispensable to the ultimate success of whatever plans are finally adopted. Such plans, which must necessarily represent a continuous and combined effort, must in some parts provide for future developments, but this does not in any way prevent the immediate adoption of measures which will in themselves ameliorate present conditions and also help greatly in any scheme of public propaganda. My recommendations will therefore deal with organization, education, plant and equipment and revision of existing laws, and will include suggestions for handling the problem in its practical aspect.

I have therefore the honour to recommend:

1. A systematic detailed survey with proper professional assistance and opportunity for the study of individual cases; a plan of registration covering the Province by which the mentally defective

will be identified and classified; the adoption of a plan for educating, assisting and supervising those who are shown by this survey to be in need of help through institutional care or by trained supervisors, probation officers or social workers; and the detention in permanent homes or refuges, preferably of the colony type, of mentally defective women who are of child-bearing age, and for the segregation in institutions and colonies of both male and female feeble-minded delinquents whose anti-social qualities or criminal tendencies show a necessity for permanent restraint. The survey should proceed first through existing agencies, such as the Children's Aid Societies, Juvenile Courts and the public schools, and should be conducted in the light of the three leading ideas which I have already stated, namely, (1) that early diagnosis will enable care to be bestowed where it is most likely to do good and will enable classification to be begun; (2) that those then diagnosed as morons, whose disability declares itself later, and whose potentialities for evil are great, may, if trained in their early years be deflected from crime and made comparatively useful members of society and (3) that the results to the community of survey, care and supervision will be found to be exactly in the same ratio as are the excellence or carelessness bestowed upon these efforts. In other words, the community will only get, in this particular, exactly what it pays for.

Registration is probably only needed in case of those who are designated, as feeble-minded according to the following definitions:

"Feeble-minded persons—that is to say, persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision, and control, for their own protection or for the protection of others, or, in the case of children, that they by reason of such defectiveness appear to be permanently incapable of receiving proper benefit from the instruction in ordinary schools.

"Moral imbeciles—that is to say, persons who from an early age display permanent mental defect coupled with strong vicious or criminal propensities on which punishment has had little or no deterrent effect."

Those who are idiots or imbeciles are easily and generally taken care of and are usually unlikely to marry. The survey can be gradually extended when the urgently-needed work already outlined has been got in hand.

The confinement of those needing detention on account of anti-social qualities should proceed upon the principle of finding con-

tinuous work under proper conditions, the females in institutions where they can be educated to engage in such work as is suitable for them, and the males in colonies where out-door work can predominate and where they can be trained in manual labour in farming, reforestation, breaking and clearing land, building roads, erecting buildings and in other forms of activity.

2. The formation of a Board of Control or of a Departmental Committee, under the control of the Provincial Secretary, and under the chairmanship, if possible, of some energetic, well-known and philanthropic citizen, and with an executive and paid secretary of known experience, who should be appointed an official of the Provincial Secretary's Department. Such a Board or Committee should include in its personnel individuals selected from organizations such as the Children's Aid Societies, the Canadian National Committee on Mental Hygiene and the Provincial Association for the Care of the Feeble-minded, and other kindred bodies engaged in social welfare work; from the hospital staffs or physicians already interested in psychiatric work; from the medical health officers of municipalities and from probation officers, together with at least one member who has had practical experience in the care of the feeble-minded. Provision should also be made for the presence on it of some public-spirited men whose experience and interest would be of great value in stimulating public opinion.

This Board or Committee should elaborate a proper scheme of survey and registration and also provide for the important subjects of early diagnosis and of paid expert study and supervision as well as for the extremely important duty of co-ordinating and profiting by the work of all social agencies and workers who come into contact with feeble-mindedness.

The co-operation of the judges and the legal profession, as well as that of municipal officials, should be solicited to aid in the remodelling of our statute laws and legal procedure which at present require renovation in so far as they bear upon this subject. I look with confidence to some aid from both the Bench and Bar and from the municipalities in this department of activity, and I am sure it can be procured if the subject is properly placed before their associations as well as before individual members of the Bench and Bar and of the Municipal Service.

The size and constitution of this Board or Committee will be indicated by the scope of its work and purpose when these are determined. It should undertake to issue what literature is neces-

sary and look after and initiate such propaganda as may be decided upon. In the projected survey care should be taken to include the examination and classification of all confined in penal institutions or asylums or resident in refuges or other similar establishments in which the feeble-minded are usually to be found, and of all school children.

I further recommend the appointment at once of an Inspector for Mental Defectives or for the Feeble-minded, who should be regarded as an independent officer in the Provincial Secretary's Department.

3. The erection of a properly equipped Psychopathic Hospital in Toronto, to be followed by others in suitable centres. This hospital should be arranged and maintained so that it will provide for the examination and study of all suspected mental cases before their ultimate destination is finally determined, and should afford facilities for clinical instruction and psychiatric research as well as for the training of special hospital nurses. To that end it should be provided with proper equipment and with a competent staff of psychiatric and psychological experts. Its location should be near one of the larger hospitals, the use of whose equipment might save much expense. This should be preceded or supplemented by the immediate erection of a new and up-to-date Reception Hospital in the city of Toronto for the reception and temporary care and study of all suspected or acute cases of mental trouble, and should contain provision for the seclusion and treatment of cases which may by that means be saved from developing into chronic insane patients. Nothing is to be gained by putting up or providing a mere temporary shelter for mental cases in some old house, unless they can obtain proper care in the incipient and early stages of mental disturbance.

4. The enlargement of the scheme of Juvenile Courts so that they will be opened in various centres in the Province and will, as soon as can be arranged, be provided with similar scientific assistance by psychiatric and psychological experts whose services will be recognized as open to all judges and magistrates dealing with criminal cases. The proper co-ordination of these important agencies with the work of the Children's Aid Societies is most important, and the latter should be provided with Detention Homes whose immediate and proper establishment should be insisted on with due regard to their purpose as something better than mere lodging-houses for delinquent children. I refer to the need of study and

consideration for those cases who prove mentally defective or, if normal, need help and the securing of proper environment. Also the laying down of a proper standard of securing of building and equipment for Juvenile Courts with reasonable facilities and accommodation for the necessary help rendered by outside voluntary bodies and persons, both in the court work and in the supervision needed pending disposition of the cases as well as the more intensive work done afterwards by probation officers, trained supervisors and social workers. Provision should also be made for psychiatrists as an integral part of the staff.

5. The opening of a parent institution similar to that at Orillia in the northern part of the Province to which the colony system as outlined in this report can be applied in due course, and the extension of the colony system in connection with the Orillia Institute. These should be equipped with mechanical facilities for the various kinds of industrial work and manual labour as indicated in this report, and there should be a distinct advance projected in the direction of providing a proper outlet for what is produced in the supplying of all similar institutions and of others which receive Government aid. The enlargement of the scope and outlook of industrial work and manual labour at the Orillia Institute is urgently called for, if it is to be the industrial centre of the work, and also the acquisition of more farm land and more scientific equipment for larger schemes of productive work, such as poultry farming, a canning factory, scientific fruit farming, etc. Reforestation colonies should form a feature in the new advance. The proposed colony farms to be established by the city of Toronto, as set forth in this report, should be encouraged as forming a useful outlet for mentally defective children found in Toronto and not otherwise provided for.

6. More adequate provision for the permanent segregation of feeble-minded women of child-bearing age by providing, either through the enlargement or the increasing of present facilities, of suitable places for detention and also amplifying their training in useful pursuits. The survey of the present refuges, particularly in cities and towns, should be made with a view to their removal to proper and suitable locations, and the provision for more adequate buildings. Many of them are wrongly placed and poorly constructed, and have made no provision for the education of their inmates or their proper training in industrial work. Consideration should be given to the practicability of establishing laundry

colonies near large cities and towns and also town colonies similar to those planted by Dr. Bernstein in Rome, N.Y., particulars of which will be found in the report.

7. The amendment of the present legislation, both Federal and Provincial, in the direction set forth in this report with regard to Juvenile Courts and increasing their jurisdiction up to the age of 21 and in other ways so as to provide for such powers as are necessary to carry out any system of probation or supervision which may be adopted and to enable the judges of those courts to deal with their cases unhampered by provisions as to remand and custody at present only properly applicable to the ordinary criminal courts. The enactment of a simple and uniform procedure dealing with admission to and discharge from public institutions and private homes and the establishment of a proper system of transfer of the mentally defective from institutions in which they ought not to remain. The particulars of the provisions here referred to will be found in this report under the section dealing with legislation, where many anomalies are referred to and where the procedure advocated is set forth in some detail.

8. The compulsory establishment by Boards of Education and School Trustees of special training classes for mental defectives as part of the Provincial scheme of education and provision for the training of teachers so as to specially equip them for this work. These special classes should be so organized and managed as to provide an opportunity for the proper study of the pupils in them with a view to their ultimate destination. It should be obligatory upon parents to permit their children to attend these classes where so required by the school authorities. No child designated as needing special instruction in these classes should be permitted to remain in an ordinary class.

9. Recognition of the need of skilled medical advice in regard to mental defectiveness in dealing with all criminal cases and the establishment of proper clinics attached to or available for the courts administering criminal justice.

10. The establishment of suitable mental clinics each with a competent physician and social worker by municipalities in which there are hospitals and proper financial assistance and aid by the Province in this regard on the lines set forth in my second interim report dealing with venereal diseases and the enactment of such regulations or statutory provisions as will require municipalities to

establish them where deemed necessary by the Provincial Secretary.

11. Prompt dealing with degenerate settlements or vicious centres developing feeble-mindedness, by the immediate segregation of the females of child-bearing age, the removal of those families who give promise of improvement to other sections of the Province and their establishment there under conditions of help and encouragement.

12. Amendment of the Municipal Act, the Juvenile Courts Act and the Children's Protection Act, so as to give the Lieutenant-Governor-in-Council greater powers in relation to such municipal duties as are or may be imposed on municipalities in regard to provisions for mental defectives.

The respective duties of and contribution from the Provincial and municipal authorities should be clearly laid down upon the lines indicated in the section of the report dealing with this branch of the subject. Those duties so far as they affect municipal bodies might well be modelled upon the Mental Deficiency Act, 1913, with due regard to the difference between the municipal systems existing there and in this Province. The powers of the local agencies constituted under the three Acts I have referred to should be assimilated to those of the Boards of Education with regard to financial provision for their work and its maintenance and upkeep. By this I mean that a requisition from these agencies for buildings, equipment and up-keep should be treated on much the same principle as are the requisitions of the Boards in school matters. That is to say, that the moneys required for salaries and maintenance should not be subject to refusal by the municipality. If, however, the municipality so desires, the matter should be referred to the Lieutenant-Governor-in-Council who should determine the amount to be provided. As to expenditure for permanent buildings and their equipment the same rule should be followed, with the right of the Lieutenant-Governor-in-Council, on being applied to, to fix the sum required for the proposed work. In this way the Provincial Government will be in a position to see that proper needs are promptly provided for and will also in the end be responsible for the standard of progress adopted.

Authority to raise the moneys required for these purposes by rates in default of proper provision by the municipalities should be provided for.

13. The making of urgent representations to the Dominion Government to strictly enforce rigid mental tests of all intending immigrants and to reject and deport those likely to develop anti-social qualities or criminal tendencies, or to become a burden on the community, and also to provide the plant and equipment necessary for adequate examination as well as professional medical assistance by those competent to pronounce on mental deficiency.

14. The enactment by the Dominion and Provincial Parliaments of concurret legislation prohibiting the marriage of mentally defective or feeble-minded persons who have been identified and registered under the system of survey, and the requirement, in all such cases, of a certificate from proper medical and departmental authority before the ceremony of marriage can be legally performed. Also, if considered desirable, legislation imposing imprisonment for a reasonable period upon anyone who knowingly and wilfully marries or has carnal connection with a person who is mentally defective so as to prevent, during the term of imprisonment, their further procreation of children who may be feeble-minded.

15. The definition of mental defectives as given in the Mental Deficiency Act, 1913, might well be adopted in this Province as properly descriptive of those intended to be affected by any proposed action, and the divisions into classes as given in that Act should be followed in order to avoid confusion in legislation.

16. Provision should be made for licensing for limited periods and for inspecting private homes for mental defectives where they might be received and cared for. The terms of such license and the necessary provisions for proper and personal inspection are dealt with in this report.

17. There should be accommodation provided, either in existing orphanages, private homes or in special wards or pavilions in the Orillia or other institute for the reception and care of infant idiots and imbeciles. Such provision to be carefully safeguarded as to license and inspection in the case of orphanages or private homes proposing to take advantage of this provision.

18. Periodical inspection of all institutions, homes or colonies in which mental defectives are received or detained should be made by medical men specially qualified to deal with mental deficiency and not merely by registered practitioners who are not so qualified.

This should also be insisted on in all cases of either voluntary or judicial commitment, discharge or transfer where medical certificates are part of the material upon which action is being taken.

19. The education of more medical students in psychiatry and psychopathy is a pressing need and a post-graduate course should also be provided. It is a matter of common knowledge that specialization in this department of medicine is confined to comparatively few of the medical profession. If any rapid progress is to be made either in the matter of surveys or in the examination and scientific study of mental deficiency there must be a large increase in the number of those who possess the requisite qualifications.

20. Special attention might well be given to the question of how far mental deficiency and feeble-mindedness, as now understood, might afford a defence in criminal trials. I have dealt with this in a section of this report and commend it to the attention of those who may be in a position to deal with it. It needs to be considered, as it must inevitably come up, sooner or later, in the courts.

Social Background

*Why Community Organization?

A Statement of a Need, and Some Suggestions for Meeting It

BY JOHN COLLIER,
President of the National Community Centre Association.

MR. Chairman, Ladies and Gentlemen: In my brief time I want to suggest first why the Cincinnati Social Unit is of national importance, then to refer briefly to some details of it as I have seen it.

The whole country is looking for leadership and initiative in the field of community organization. What even five years ago was thought to be rather an esoteric topic—community organization—is now preoccupying hard-headed people all over America. So that when President Wilson, about sixteen months ago, stated that he thought that community councils, then only types of experimental community organization, would, if fully developed, weld the nation together, as no other force would weld the nation together, would weld it together as no nation of great size had ever been welded before, these words of the President were not taken as rhetoric, but as deliberate and moderate words.

A DOMINANT ISSUE.

Why is community organization a dominant issue in America to-day? Within three weeks of each other, some four months ago, one of our great bank presidents, and the President of the United States, and the representatives of the great Railway Brotherhoods, made independently this statement, that in America the conflict between organized capital and organized labor had reached a deadlock; that as fast as wages increased costs increased faster; that the adjustment of industrial disputes was a beginning, not an end; that the real American problem was not wages, or even hours, but "real wages,"—what we call "the reduction of living costs." Frank Vanderlip, President Wilson and the Railway Brotherhoods coincided in that statement.

*Speech delivered Thursday evening, October 23, 1919, National Social Unit Conference.

At Washington to-day we are facing the grim deadlock of uncompromising organized capital and uncompromising organized labour, and the nation is hands up. Somehow it appears that the real wage must be increased. There must be found some other way besides beating wages up or down. Community organization is needed to increase the real wage.

Now, that is a perfectly specific proposition. To be concrete, in any American city to-day you will find that through lack of organization in the dental service of that American city, the people are paying unnecessarily high prices for dental work which in many instances had better not be done at all. We found among the unionized girls of the garment trades of New York, earning on an average less than five hundred dollars a year, those who were spending as much as fifty dollars a year on dental work of an injurious rather than a helpful kind. It is purely a matter of community organization to make scientific dental service available at incredibly low prices to all the people without either adding to the tax budget or calling on philanthropy to make up a deficit.

Passing from the matter of health service to the matter of housing conditions, and to the supreme matter of entertainment in the life of people during their leisure, you will find that community organization will increase the power of the dollar, and not increase it two or five or twenty per cent., but hundreds per cent. I am not stating an economic notion at all, but a fact that could be illustrated, not from European experience only, but from American communities, rural and urban. But, to secure these various types of organization which are evolutionary rather than revolutionary, which are salvation through co-operation rather than through combat, we must have organization within limited areas, organization among the consumers of health service, and pleasure service, and housing service, and organization of all of the administrations of public and private welfare agencies.

We need community organization to increase the real wage in order that the unhappy fever of unrest which the American people are now feeling may cease. We need community organization in order that we may turn this fever into a forward-looking disposition to get somewhere. We need the increase of the real wage in order to prolong life and decrease unhappiness. In brief, it is the fundamental problem to increase the real wage, and we need community organization for that purpose.

A Return of Individual Responsibility is Necessary.

I think the other reason why all over America it is being recognized that community organization must come is this: our lives are becoming so complicated, the units through which we work are so huge—corporations that span the continent, governmental systems that deal in millions of human units and hundred of millions of dollars in highly segregated public budgets—life has become integrated on so vast a scale, that each individual is nothing as against that enormous impersonal organization. Under these conditions, where I, the citizen, am not needed and can do nothing, sooner or later I develop toward the social order either a pessimism, or a cynicism, or a hatred. Unless we can somehow bring the average man into a warm and potent relation with business and with government, then we are going to have progressively a state of mind here in free America like that which we call Bolshevism. We are not going to have that state of mind among the disinherited, we are going to have it among the well-to-do, that state of mind of cynicism and of kicking, and always voting against somebody, and never for anybody or anything—destructive Bolshevism.

Something in America must be done to make democracy a living, everyday, homely reality, and unless we can do it, there is a real danger that our whole parliamentary system will have to be scrapped, that our whole so-called constitutional order may be kicked over by the people. Community organization is a means of bringing the citizen into an intelligent and potent relation with business and with government.

Cincinnati as a Laboratory.

Now, if Cincinnati is the theatre, the laboratory, where an experiment is being carried out that may show how to get community organization, then Cincinnati is doing a momentous service for the American Commonwaelth, for the American people. I believe that Cincinnati is one of the three or four indispensable laboratories of community organization at this time. This is why I think so: All over America we have neighbourhood organization, groups of people getting together, talking about things, and others doing things. But in Cincinnati you have a sustained, carefully measured, I may say, a deeply imagined effort and plan to organize the city, the agencies, departments of government, the occupations, to so organize them in relation to the local neighbourhood life that when the individual citizen becomes conscious of his citizenship there is a

line of service ready for him to carry out. If he feels a need, he can either get the need met or can learn quietly and thoroughly why the need cannot be met.

Cincinnati is a place where through the Social Unit is being organized the structural, institutional part of our democratic life in such a way that the people can understand it, and use it, and love it, and therefore conserve it. No other effort in community organization has been carried out with a more sustained attention to the conserving of governmental and institutional values than has the Cincinnati Social Unit. In the right sense, the work of the Cincinnati Social Unit appears to me as the most significantly conservative piece of community work going on in America, as that type of community work which will bring about a gradual modernization of industry and government without violent fractures, without civil wars, without combines of hate, the kind of community organization that will make possible the carrying over into the Twentieth Century the moral and human liberalism of our Anglo-Saxon past.

My time is almost up, and I will have to speak briefly about the block organization. We have this picture of the Social Unit, wherein the doctors as a group, and the social workers as a group, and the clergymen as a group, and the teachers as a group, organize to talk about their technical problems and to do team work in the more efficient carrying out of their specialized vocations, and all that organization of experts and groups is focussed down toward this tiny ultimate unit of tne block. And we see the block worker, whose office it is to bring each individual, even the children, into a vital relation with that whole social structure of the experts and the institutions.

It seems to me that the block worker and the block system are important elements in the community organization plan, but that they are only a part of the neighbourhood organization plan as it must develop. We must look not only to that intensive organization wherein the social order reaches down through a block worker and touches every living soul in the area, but we must look for an organization of the laity, of the plain people, you and me, living in neighbourhoods, or perhaps not living near in the same neighbourhood, meeting in forums and talking over our troubles and problems, and talking them over in some degree of fervour, and polemical violence, if you will, and reaching out for the expert knowledge that can illumine the problems, or offering to the expert that deeply human thing that comes out of masses of people when they hold to-

gether long enough to discover their common interest. The thing which comes out of the mass, which Abraham Lincoln and Thomas Jefferson felt to be a thing divine; the thing that comes out of the mass when it earnestly assembles to solve its problems together, somehow goes on beyond the headwork of the wisest social engineer. So Rousseau and Jefferson and Lincoln believed that the people in the long run were wiser in the mass than the wisest person. We need that element, and it is my impression that the element of mass assembly needs to be more rapidly and more courageously developed in Cincinnati than it has yet been done, and it can be done by the block organization, the organization of the neighbourhoods. You can have in Cincinnati a forum, an organization which will be a forum, constructive and orderly beyond the forums of any other city in America.

Since my time is up, I will have to stop, yet I simply have to say this. From the time the plan was first conceived I have known those who first thought of it. For years I was a skeptic about the practicability of the Social Unit plan. I saw the earnestness of those people who were in it. I appreciated the unusual sincerity and fine human nature of the group who were promoting the idea, but I was a skeptic as to its applicability here and now. Slowly, against my own mental reservations, I have come—I have been driven by the evidence of what I have seen, by what I have heard in your talks, by what I have seen in your statistical tables and in you case records; I have been brought, against my will, if you like, to consider that the Social Unit is one of the two or three momentous experiments in democracy going on in America.

The Provicial Board of Health of Ontario

Special Treatment Clinics for Venereal Diseases

IT is the intention of the Provincial Board of Health to assist local Boards of Health to establish special clinics for the treatment of venereal diseases. The Board feels that the choice of a site for the special clinic or clinics in the various municipalities should be left to a certain extent in the hands of the local authorities who understand local conditions. The Board would suggest, however, that where facilities already exist, as in the case of hospitals, etc., other things being equal, these facilities should be used. The Board will afford the following assistance to each clinic established:—

(1) For the purchase of furnishings and apparatus for a special clinic, $1,000.
(It is thought that the cost of the apparatus and furnishings, as per schedule A, will not exceed this amount.)
Where a clinic is already in existence and up to the standard (see schedule (a) the same financial assistance will be given.

(2) For each out patient treatment for gonorrhoea ..... 50c.
For each out patient treatment for syphilis ..... 50c.
(No more than one treatment each day will be paid for.)
For each out patient treatment for syphilis in addition, free "salvarsan" will be provided—as soon as the Board is in a position to furnish its own product.

(3) In the case of patients treated in the hospitals the sum of 25c. in addition to the foregoing grants will be paid to the hospital for each day of indoor treatment up to three months, at the end of which time the indoor grant will cease.

(4) The sum of $500 towards the maintenance of a Social Worker.

(5) Standard record forms for the use of these special clinics will be supplied by the Board.

In return for this assistance the Board will require that the clinic will be kept up to a certain standard as follows:—

(1) The special clinic shall be for the treatment of Venereal diseases.

(2) The apparatus and furnishings for the clinic shall be as follows:— (See schedule (a).)

(3) The personnel of the clinic shall be:—

(a) One specialist in venereal diseases who shall be appointed by the hospital if the clinic is in connection with a hospital and by the local Board of Health in other cases. This officer must also be satisfactory to the Provincial Board.

(b) Such medical assistants as may be necessary shall be appointed on the same basis.

(c) One full time social worker who shall be a graduate nurse.

(d) One clerk, if the clinic is treating more than forty cases per week.

(e) One male orderly.

(f) If possible, one undergraduate nurse to assist in the clinic.

(4) All treatment in the clinic shall be free.

(5) At least one night and two day clinics shall be held per week. (This may be modified on agreement.)

(6) Separate hours shall be set aside for men and women in the clinic; also, if possible, separate hours for the treatment of gonorrhoea and syphilis.

(7) Weekly reports will be required on forms supplied by the Board.

(8) The clinic including its records, apparatus, method of treatment, etc., shall be open to inspection by the Board.

(9) The municipality will be expected to advance an amount for upkeep of the clinic or clinics which shall be approximately equal to the amount advanced by the Board. (See section 14, sub-secs. 1 and 2, Venereal Diseases Prevention Act.)

(10) The social service nurse shall follow up cases outside the clinic to see that all patients continue treatment and also that any possible contacts are examined.

(11) Accounts should be rendered at the end of the month and will be paid on the Board's certificate.

(12) The Board reserves the right to modify these rules if such should, in the interest of the clinic, be deemed necessary.

Local Boards of Health and hospitals desiring to take advantage of this offer are requested to make application to the Provincial Board of Health, Parliament Buildings, Toronto.

Cases and Deaths from Communicable Diseases reported by Local Boards of Health for the Four Weeks Ending January 24th, 1920

Diseases.	Jan., 1920 cases	Jan., 1920 deaths		Jan., 1919 cases	Jan., 1919 deaths.
Small-pox	1,188	6		40	0
Scarlet Fever	642	21		206	4
Diphtheria	636	70		294	25
Measels	1,296	16		5	0
Whooping Cough	162	19		56	6
Typhoid Fever	42	12		11	2
Tuberculosis	145	135		186	156
Infantile Paralysis	2	0		.....	.....
Cerebro-spinal Meningitis	8	7		4	4
Influenzal Pneumonia	15	9		.....	.....
Influenza	654	15	Influenza and Pneumonia	.....	1,514
Acute Primary Pneumonia	.....	297		.....	.....
	4,790	607		802	1,711

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH.

	Jan., 1920 cases	Jan., 1919 cases
Syphilis	112	125
Gonorrhoea	94	138
Chancroid	3	1
	209	264

The reports of Local Boards of Health for four weeks ending January 24th show a decrease in small-pox cases of 245 in the Province, compared with December last, when there were 1,443 cases reported. Of the 1,188 cases reported for January, Toronto contributed 649, while the rest of the Province had 539. Diphtheria, which has been prevalent for the last three months, shows a decrease of 108 cases, while Scarlet Fever returns give an increase of 88 cases, 4 deaths. The cities reporting the greatest number of cases are as follows:—

	Diphtheria.		Scarlet Fever	
	cases	deaths	cases	deaths.
Toronto	251	23	191	2
Hamilton	63	4	82	3
Ottawa	32	1	37	3
St. Catharines	27	3	2	0
St. Thomas	9	0	2	0
London	29	7	10	0
Kingston	6	0	11	3
Fort William	2	0	25	0

The epidemic of Influenza that has prevailed in many of the American cities has not as yet invaded the Province to any extent, with the exception of one city that reports 600 cases. The other 54 cases reported are rather more sporadic than epidemic being scattered over 15 Municipalities.

An epidemic of Measles prevails in the City of Ottawa, where 840 cases have been reported out of 1,300 for the whole Province, but the case mortality is small compared with that of Whooping Cough as may be seen in the comparative table.

Encephalitis Lethargica (sleeping sickness) caused 8 deaths out of 18 cases, but no epidemic appears to exist as the cases were spread over 17 municipalities. The cases and deaths are as follows:—

	Cases	Deaths
Ottawa	1	1
St. Thomas	1	1
Yarmouth Township	2	2
Goderich	1	0
Tuckersmith	1	1
Hullett	1	0
Oxford	1	0
Tilbury East	1	0
Adolphustown	1	0
London Township	1	1
Woodstock	1	0
East Oxford	1	0
Listowel	1	0
East Hawkesbury	1	1
Picton	1	0
McNab Township	1	1
Iroquois	1	0
	18	8

News Items

Dr. J. A. Doull, D.P.H., who has recently returned from overseas service, has been appointed Provincial Inspector of Health for Nova Scotia, under Dr. W. H. Hattie, Provincial Health Officer.

Dr. Allan C. Rankin, Director of Laboratories of the Provincial Department of Health, Alberta, has been made Dean of the Medical Faculty of the University of Alberta, Edmonton South.

Dr. J. J. Ower has been appointed Professor of Pathology in the Medical Faculty of the University of Alberta.

A very interesting open meeting of the Canadian National Committee for Mental Hygiene was held at the home of Mrs. H. D. Warren, in Toronto, on January 29th. Amongst those who addressed the meeting were: Dr. John A. Amyot, Deputy Minister, Federal Department of Health, Ottawa; Dr. J. D. Pagé, Quebec; Dr. Desloges, Montreal; Sir James Burn, Ottawa; Mr. David Dunlap, Toronto; Dr. C. K. Clarke and Dr. Clarence M. Hincks, of the "National Committee," and Dr. Colin Russell, of Montreal. Dr. Charles Martin, of Montreal, acted as Chairman of the meeting which was attended by a very large and representative audience.

A well attended meeting of the Child Welfare Section of the Canadian Public Health Association was held in the Hospital for Sick Children, Toronto, on January 31st last. Dr. Lionel Lindsey, of Montreal, Chairman of the Section, was in attendance, and Miss Mary Power, of the Bureau of Child Welfare of the Provincial Board of Health, Ontario, the energetic Secretary of the Section, outlined the work that the Section has done since the annual meeting in May, 1919. An active campaign in this extremely important field of Public Health work is to be launched at once. Dr. Alan Brown of Toronto, Dr. Lionel Lindsey of Montreal, Dr. George Smith of Toronto, and the Secretary of the Section are to prepare a draft scheme for further consideration of the Section at an early date. Co-ordination of all Child Welfare work, Federal, Provincial and Municipal; official and voluntary, is to be attempted by the Section.

The Canadian Red Cross Society has adopted as its peace-time programme the "Prevention of Sickness, the Control of Disease and the Mitigation of Suffering." Co-ordination of the efforts of all national voluntary health promoting agencies will probably be attempted, and close affiliation with official, governmental agencies sought.

Dr. A. C. Jost has been appointed Divisional Medical Officer of Health, Eastern Health Division, Nova Scotia, under Dr. W. H. Hattie, Provincial Health Officer.

Dr. Chester P. Brown, D.P.H., has received an appointment in the Dominion Government Quarantine Service, under the Federal Department of Health, and has been assigned to duty at the Quarantine Station at St. John, New Brunswick.

Miss Mary Power, Director of the Bureau of Child Welfare of the Provincial Board of Health, Ontario, gave one of the most interesting addresses of those presented to the recent Congress of the Social Service Council of Canada, in Montreal.

The Public Health and Medical Congress to be held in Vancouver in June next is to be one of the most important gatherings of the sort ever undertaken in Canada. All interested in the problems of public health and social welfare generally should plan to attend the meeting.

The PUBLIC HEALTH JOURNAL has at its disposal a limited number of copies of Mr. Justice Hodgins' report on Venereal Diseases. Any interested subscriber may procure one by applying to the editor of the JOURNAL.

It is fully expected that a license to manufacture "salvarsan" will be given to the Provincial Board of Health of Ontario by the Dominion Government within the next few days. At a conference between the Hon. Sir George E. Foster, Minister of Trade and Commerce, and Dr. J. W. S. McCullough, Chief Officer of Health for Ontario, in Ottawa on February 7th, this was finally decided. The Board will in consequence be able to supply salvarsan free, or at least at very reduced prices to all hospitals and Government institutions within the next couple of months. The Board will also have power to sell to the other provinces of Canada for their hospitals and institutions.

Editorial

THE CAMPAIGN AGAINST VENEREAL DISEASES.

IT is understood that the Dominion Government programme for the combating of Venereal Diseases in Canada is well under way. Distribution of the $200,000 voted to the provinces some time ago has commenced, while plans are being worked out in the various provinces for the proper expenditure of this money and for the money which will be voted by the provinces themselves to supplement it. It is well that one should understand from the outset that the working out of a scheme for the successful combating of Venereal Diseases on a large scale is not a simple matter, and that it involves a good deal more than the mere establishment of clinics in the more populous centres. Each province must have its scheme carefully prepared beforehand, and it must be a comprehensive one if it is to be successful. It is important that a competent officer be established in each province to take charge of the provincial campaign—under the Chief Officer of Health, of course. Legislation exists in most of the provinces, but it is a question whether it is being well enforced in any of them. This raises the question of the desirability of appointing a Law Enforcement Officer to take charge of all law enforcement work pertaining not only to the working out of the Venereal Disease Prevention Acts in the various provinces, but also to similar work in connection with the prevention of prostitution, regulation of boarding houses, etc.

Clinics will be of little value unless they maintain a high standard and—not the least important question—unless they are patronized. Propaganda work must be carried on on a fairly large scale if the tremendous number of cases which up to the present time have remained untreated are to be persuaded to take treatment, and if doctors throughout the country are to be made to realize that it is important that they should report their cases.

The Canadian National Council for Combating Venereal Diseases has a number of committees at work on various phases of the propaganda part of the problem, and we hope for results in the near future. It is expected that the Provincial Committees of the National Council will do their part and that within the next few months the people of Canada will come to know Venereal Diseases not only as a serious public health problem, but as a problem capable of solution. THE PUBLIC HEALTH JOURNAL urges its readers in every province to do all in their power to help the Dominion-wide campaign against Venereal Diseases.

CHILD WELFARE.

THE February number of THE JOURNAL was largely devoted to matters relating to Child Hygiene, because there is no problem of more vital interest to the state than that of Child Welfare.

Official and voluntary agencies have begun to make plans to arouse the community to the necessity for concerted action along broad lines. These plans should make possible the correlation of the work of all voluntary bodies endeavouring to do Child Welfare work.

The Federal and Provincial Department of Health acting in conjunction with the Child Welfare Section of the Canadian Public Health Association should formulate a scheme which would provide ample scope for official and voluntary action carried on by all Health Departments, Federal, Provincial and Municipal, and their valuable auxiliaries, all the voluntary agencies in this field

Concretely, there should be established prenatal clinics in all communities; Well Baby Clinics also should be provided; not only in cities, but in all rural districts as well. Provision for Medical Inspection of School Children and a Public Health Nursing Service in schools in every district in Canada should be one of the first objectives.

Voluntary organizations can arouse public opinion and make it certain that health officers, who apply for appropriations to pay for such services, will have their requests complied with. Let us first, then, arouse the public. The fact that there were 6,402 deaths in children under one year of age in Ontario, in 1918, amongst a total of 64,729 living births and 2,400 still-births during the same period, is sufficient argument in favour of *immediate* action in Ontario!

BOOK REVIEW.

Industrial Medicine and Surgery, by Henry E. Mock, M.D., F.A.C.S., Assistant Professor of Industrial Medicine and Surgery at Rush Medical College. Octavo volume of 846 pages with 210 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $10.00 net.

This book by Dr. Henry E. Mock, who, in addition to his other qualifications, is Chief Surgeon to Sears, Roebuck Co., Chicago, is full of the most valuable sort of information on matters pertaining

to this new specialty dealing with human maintenance in industry. To the veriest tyro in public health a perusal of its pages must prove an inspiration, while for the industrial physician or surgeon, the public health expert, the manufacturer of vision or the labor leader alike it contains an immense amount of practical information on all aspects of the health problem in industry which is of real value. Industrial hygiene is a comparatively new field. It is one of the most important fields in modern preventive medicine and a field the possibilities of which must appeal to everyone. Dr. Mock is evidently not only an expert but an enthusiast in his chosen work, and this very valuable volume provides the best evidence of that fact. The book is written in the most convincing and interesting style, and is very well worth reading. It is divided into six sections dealing with the subjects of: Industrial Health Service, Prevention, Industrial Medicine, Industrial Surgery, Compensation, Insurance, Medical Phases and Reconstruction. Each of these is discussed with a thoroughness and care which is beyond criticism. Great emphasis is placed on the preventive aspects of the question. It is shown very clearly what a tremendous advance has been made since the day when the industrial physician or surgeon was looked on by his fellows as almost a physician who had lost caste.

Considerable emphasis is placed on the matter of recreation and exercise as related to supervision of the health of employees, food, accident, prevention, women in industry, employees' compensation and health insurance, while, of course, the more obvious subjects, such as: First aid, emergency surgery, etc., are not neglected. Illustrations and charts dealing with both the medical and social aspects of industrial hygiene are generously provided.

I can recommend this text-book to readers of the PUBLIC HEALTH JOURNAL as one of the most valuable in this field which has yet been published.

G. B.

The Public Health Journal

VOL. XI APRIL, 1920 No. 4

Peace-time Programme of the Red Cross Society

Read at the Annual Meeting of the Toronto Branch, Canadian Red Cross Society, January 29th, 1920, by

J. G. FITZGERALD, M.B., *Professor of Hygiene, and Director, Connaught Antitoxin Laboratories, University of Toronto, Toronto.*

AS a result of the conference called by the Committee of Red Cross Societies in April, 1919, at Cannes, there has been promulgated by the League of Red Cross Societies, a peace-time programme for the organization, the object of which is:—"the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world."

The conference was attended by delegates representing Great Britain, France, Italy, Japan, and the United States. Included in their number were many of the most distinguished men of Science, in the field of Preventive Medicine. Dr. Roux, Director of the Pasteur Institute, Paris, was chairman, and Dr. Wm. H. Welch, Director of the School of Public Health of Johns Hopkins University, Vice-Chairman. Amongst others present were:—Professor Laveran of Paris, the discoverer of the cause of Malaria; Sir Ronald Ross, of London, who was the first to prove that mosquitoes are the agents concerned in the transmission of that disease; Professor Calmette, of Lille; Sir Arthur Newsholme, of London; Dr. Truby King, famous for maternal and Child Welfare Work in New Zealand; Professor Castellani, of the Royal Italian Medical Service (Naval Branch); Professor Golgi, Senator and President of the Superior Council of Health of Italy; Sir Robert Philp, of Edinburgh; Miss Lillian Wald, of the Child Welfare Bureau Department

of Labor of the United States Government; Miss Gill, of the Royal Infirmary, Edinburgh; Miss Lloyd-Still, of St. Thomas' Hospital, London, representing the Nursing Services of Great Britain; Countess de Roussy de Sales, of the French Red Cross; Mr. Henry P. Davison, Chairman of the American Red Cross; Dr. Herman Biggs, Commissioner of Health for the State of New York and many others.

This very distinguished gathering of Scientists, Public Health Administrators, (representing official and voluntary organizations), Social Workers, and others interested in humanitarian endeavours, unanimously concluded that incalculable benefits should accrue to mankind from the participation of the Red Cross Society in activities looking to the relief of human suffering through prevention, in the application of the scientific knowledge we now possess.

Official endorsation of this action by the Signatories of the Peace Treaty on the side of the Entente Allies, was given in Article No. 25 of the Covenant of the League of Nations, being Part L of the Treaty of Peace, that:—"The members of the League agree to encourage and promote the establishment and co-operation of duly authorized, voluntary National Red Cross Associations, having as their purpose the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world."

Dr. Roux, of the Pasteur Institute, at the opening session voiced the unanimous feeling of the scientists in attendance when he said: "The Red Cross wishes to give to the people the benefit of scientific knowledge through the medium of education. How could we refuse our most hearty co-operation in such an effort?" In the expression of this sentiment is recalled the statement of the great master, Pasteur, who fifty years earlier, said:—"Science will have tried by obeying the law of Humanity to extend the frontiers of life." That the peace-programme is compatible with the traditional policy of the Society, was emphasized by Dr. Welch when he said:—"The Red Cross in entering upon the field of preventing human misery, caused by disease and suffering, is not diverting from its great work of relief, but is following a natural and logical plan of development, for preventable disease is a continuing calamity, and its control is the best kind of relief."

The immediate task of the Conference was to make certain recommendations concerning the initial steps which should be taken. It was, therefore, deemed desirable that some concrete proposals should be presented and fully discussed. The wisdom of such a procedure will be appreciated when it is understood that

unnecessary duplication of effort, could not for a moment be entertained. It was clearly recognized at the outset, that:—"Public Health Administration is wholly a Governmental function: (to quote Dr. Biggs, Commissioner of Health for New York State), yet many voluntary organizations of various kinds, are under many conditions, absolutely essential in order to create the public opinion necessary to cause the enactment of the required legislation, or to bring about official action."

Dr. Wyckliffe Rose, Director of International Health Board, of the Rockefeller Foundation, one of the world's greatest voluntary agencies in promoting public health, endorsed Dr. Biggs' statement in the following words:—"Fundamentally public health administration is a state function, voluntary agencies should work in cooperation with Government agencies in their name, and is such a way as to adopt their efforts to the needs of establishhed Government agencies by encouraging research, by popular education and by public health demonstrations, under the direction of, or in the name of Governmental agencies."

Recognizing then that Federal, Provincial, and Municipal Departments of Health, are the agencies, fundamentally responsible, any one of these may be assisted by a voluntary agency in the following ways:—

(1) By enabling the Government agency to carry on research work to obtain the knowledge which it wishes;

(2) By supplying the means whereby it can go through the experimental stage in the application of that knowledge to the control of the disease, and standardize working methods; and finally,

(3) After such standardization, means may be supplied to enable the Governmental agency, by demonstration, to convince the people of the value of the work in order that they may vote the funds necessary to complete the task.

Dr. Farrand, of the U. S. National Association for the Study and Prevention of Tuberculosis, summarized the peace-time opportunities open to the various National Red Cross Societies in the following fashion:—

(1) To Aid, to Stimulate, and to Co-ordinate.

(2) Through the establishment of an Advisory Board, work in harmony with all Governmental and Voluntary Health-Promoting Agencies.

(3) To carry on Public Health Propaganda.

(4) Provide proof, through demonstration, of the great value of the public health nurse.

(5) To utilize trained workers now available, in personal service, as health visitors, etc., especially in welfare work for women and children.

In connection with the final suggestion, Dr. Biggs said:—"Only with the assistance of public health nurses or health visitors can an important health campaign be successfully carried on."

Great emphasis was laid upon the desirability of doing preventive, rather than relief work. Sir Arthur Newsholme, formerly Chief Medical Officer of the Local Government Board of England, stated:—"I should like to endorse what was said as to the great effectiveness of preventive, rather than relief work." "One of the most important functions of the National Red Cross Society will be active propaganda to bring home the fact that it pays to adopt preventive methods on the most lavish scale possible."

It should here be mentioned that International, as well as National effort is expected of the constituent members of the League of the Red Cross Societies. The International work of the League will be directed by the Bureau already established at Geneva, and with this bureau each National Society will co-operate. This will provide, amongst other things, for co-ordination of relief efforts in time of earthquake, fire, flood, or famine, and also provide for an International Public Health Intelligence Division for collection, digestion and dissemination of useful and necessary public health information.

We see then that the efforts of the Society in the future are to be devoted to assisting in the work of saving of lives, the prevention of unnecessary sickness, and the relief of human suffering. National Voluntary Health-Promoting agencies should be assisted, encouraged and their work co-ordinated. Closest affiliation with Governmental bodies should at the outset be established in order that their needs may be ascertained and direction and guidance sought, in any measures initiated for the relief of such needs. The assumption of duties already assigned to Voluntary, Nationally organized agencies, should not be contemplated, for a moment.

The greatest needs of Canada, whether in relation to Child Welfare, Maternal Care, Extension of Public Health Nursing, Tuberculosis, Mental Hygiene, Venereal Diseases, or Public Health Education and Publicity, should be carefully ascertained and then appropriate measures instituted always in co-operation with, or under the direction of agency whose duty it is to carry on the particular work. *All such efforts should be planned with prevention as the motive.* Relief, of course, in time of National peril or

disaster, may at any time be a necessary supplementary form of activity.

Too great stress cannot possibly be laid upon the desirability of utilizing to the fullest extent, the splendid services of the women workers mobilized for War Service, whose efforts were beyond all praise. To direct this personal, voluntary service into the new channel would be a notable achievement and nothing should be deemed too great an effort to effect this.

In conclusion it is sincerely hoped, since there is the clearest possible definition of the scope of activity of the Red Cross Society, that Governmental and Voluntary Health-Promoting Agencies, will welcome the entrance into their field of this new force, potentially so powerful in material resources and personal service.

Remembrance of the sacrifices of those who gave their all for King and Country, should provide the incentive to continuous co-ordinated effort to aid in the "improvement of health, the prevention of disease, and the mitigation of suffering."

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Medical Conference

Held at Cannes, France, April 1 to 11, 1919, at the invitation of the Committee of Red Cross Societies—Recommendations and Resolutions

Introductory Statement.

THE magnitude of the relief work done during the War by the Red Cross and the personal participation in its activities of multitudes of people in many countries, as well as the devotion to it and the appreciation of its usefulness of enormous numbers who have experienced its benefaction, have shown it to be an agency for good of unparalleled force and power.

The Conference therefore heartily approves of the purpose of the Committee of Red Cross Societies to extend greatly the activities of the Red Cross in time of peace, to the prevention of disease and the betterment of the health and general welfare of the people in all countries. The prosperity and happiness of all the nations of the world can be greatly furthered by the power of man to promote health and to prevent disease—a power which has been vastly increased in the last half century by scientific discoveries—so as to render this new field of activity of incalculable racial significance, both socially and economically.

The potential usefulness of the Red Cross in this field is unlimited, and the program proposed is really the logical development of its previous activities in the extension of temporary relief in times of war or disaster.

As a voluntary organization engaged in humanitarian work it can command, as experience during the war has shown, the services of the great leaders of the world in every line of activity. The necessity for expert guidance and advice has been recognized in the past and they will be needed in the future, and it is most important that the Red Cross should not only retain, but augment for its continued work, the great prestige and power which it has acquired with all masses among all peoples and in all nations.

In view of these considerations, it is our belief that no other organization is so well prepared to undertake these great responsibilities at the present time as the Red Cross, and no movement deserves more the hearty and enthusiastic support of all people than does this.

RECOMMENDATIONS OF THE CONFERENCE.

The Conference, therefore, heartily recommends in furtherance of this purpose, the establishment in connection with an association or League of National Red Cross Societies, a Bureau of Health with a Director and a staff and an Advisory Council, and that the memoranda and reports which have been submitted to the Conference on this subject serve as a preliminary basis for the proposed organization and its activities.

Other important fields of Public Health than those which have been presented and considered at the present Conference, e. g., Mental Hygiene, Industrial Hygiene, Foods and Nutrition, etc., are reserved for consideration when the Bureau of Health has been established.

It is understood that the central organization will mainly operate through national Red Cross Societies, where these exist, and that itself a voluntary agency, it will not supplant but will endeavour to strengthen, aid, and co-operate with other voluntary and with national health and relief agencies.

An important immediate task will be to assist in the establishment of Red Cross Societies in countries where none now exist, and to strengthen and unite for health work existing Red Cross Societies.

Recognizing the prevention of disease and the protection of the health of the people as a primary responsibility and function of government, a non-political organization, such as that of the Red Cross, will be able by education of the public and in many other ways, to stimulate, support and aid the government in its health work.

Although the Conference does not advise the Bureau of Health of the Red Cross to undertake at once all the activities considered, it submits the following resolutions and memoranda unanimously adopted by the Conference relating to the special subject of Preventive Medicine, Child Welfare, Tuberculosis, Malaira, Venereal Diseases and Nursing, as well as the report on Publication, Education and Statistics, for the purpose of indicating in a general way some of the lines of activity which the new organization may follow:

1. Resolved: That in view of the wide prevalence of typhus fever and the extremely grave representations made to the Conference concerning it, the control of this disease be at once undertaken as an emergency relief measure.

2. Resolved: That the promotion of a wide extension and development of Child Welfare Work be selected as of the first important constructive activity.

3. Resolved: That wide Public Health Legislation and efficient Public Health Administration be encouraged everywhere and by all appropriate means, through National Red Cross Societies, and particularly that the accurate and full registration of Vital Statistics be urged as forming the fundamental basis for definite and permanent improvement of health conditions.

4. Resolved: That efforts be made to secure a standardization of the Vital Statistics of all those countries where adequate registration and notification are not in effect, so that comparable data on important subjects may be available, and that standard tables be prepared and submitted for modification and adoption by the authorities.

5. Resolved: That the Bureau of Health encourage scientific investigation in Hygiene and Sanitary Science, since progress in Public Health depends upon the advancement and the application of knowledge.

6. Resolved: That the establishment of Public Health Laboratories or the provision for laboratory service for every community, is an extremely important means of promoting efficient public health administration.

7. Resolved: That the extension of the employment of public health nurses or health visitors be furthered in every possible manner in all countries, and that standardized educational centers for training such nurses or visitors be developed.

8. Resolved: That the program for the control of Tuberculosis, Malaria and Venereal Disease submitted by the Conference be urged for adoption in all countries.

9. Resolved: That since educational propaganda have been shown to be the most efficient means for forwarding all forms of health activity, we especially urge the general adoption of scientific publicity methods.

10. Resolved: That the training of thoroughly qualified teachers of school children in all grades in the subjects of personal and general hygiene, and the inculcation of proper health habits during school life, are essential measures for permanently improving the health and contributing to the welfare of the people.

11. Resolved: That special attention be directed everywhere to the importance of town and city planning and proper housing for working-men; and that National Red Cross Societies be advised

to prepare plans and designs suitable for use in their respective countries, and proffer the assistance and the advice of experts where suitable construction work is under consideration.

12. Resolved: That National Red Cross Societies and their chapters be urged to promote the erection of buildings to be used as health and community centers in their respective localities, as a most useful, appropriate and permanent memorial for the soldiers who have lost their lives in the war. That model plans and designs for these be prepared and made available to the people of various communities.

13. Resolved: That the general principles underlying successful work in new countries which are detailed in the report of Child Welfare be recommended for general guidance in all health work in such communities.

Canadian Medical and Public Health Congress, Vancouver, week of June 21st, 1920. Plan now to attend.

Report Adopted and Presented to the Conference by the Section on Venereal Diseases

The report has been prepared under the following headings:

SECTION I.—The general principles underlying a comprehensive campaign against Venereal Diseases.

SECTION II.—The activities which may be undertaken by the proposed Central Bureau in promoting the application of these principles.

SECTION III.—The initial work in the field of combating Venereal Diseases which may be undertaken by this Bureau.

SECTION IV.—Recommendations as to the form of popular propaganda which may be undertaken at once by the Bureau.

SECTION V.—Recommendations as to the best method of presenting the subject of Venereal Diseases before the International Red Cross Convention, at Geneva.

SECTION I.

In the opinion of the Section, any comprehensive scheme for the combating of venereal diseases must embody the following principles:

1. Measures for the protection of individuals not yet infected.
2. Measures for the elimination of conditions of environment favouring dissemination of venereal diseases.
3. Measures for the discovery, treatment and control, where necessary, of individuals already infected.
4. Measures for accurate observations and recording of data relative to efforts to combat venereal diseases.
5. Measures for furthering research upon venereal disease infections, and for the demonstration of new methods.
6. Measures for education.

The complete application of the above principles will probably involve the following, which are not necessarily arranged in the order of their importance:

I. Measures for the protection of individuals not yet infected.

(*a*) Education.

1. Education in moral principles.
2. Sex education of children.

3. Education of the general public in the principles underlying the combating of venereal diseases.

(*b*) Entertainment and Recreation.

1. Individual, by appeal to private tastes in recreation.
2. Communal, by stimulating group activities, such as social and athletic clubs.

(*c*) Improving and safeguarding home influences by measures to increase home comforts.

(*d*) The encouragement of early marriage.

(*e*) Custodial care of the feeble minded.

(*f*) Early preventive treatment. The Section is of the opinion that so far as army experience goes, early treatment properly applied after exposure is a successful preventive measure.

II. Measures for the elimination of conditions of environment favouring the disemmination of venereal diseases.

(*a*) Repression of commercialized prostitution and promiscuous sexual intercourse.

1. Abolishment of official recognition or toleration of prostitution.
2. Repression of street soliciting.
3. Control of restaurants, hotels, other places of public resort, and public utilities with reference to their use for the purposes of promoting prostitution.

(*b*) Control of the use of alcohol.

1. Education and influence of social customs.
2. Legislation for limitation of the use of alcohol.

(*c*) Supervision of dance halls and other public places.

III. Measures for the discovery, treatment and control of individuals already infected.

(*a*) Discovery of infected individuals through information derived from the following sources:

1. Free laboratory diagnosis.
2. Advisory clinics, dispensaries and hospitals.
3. Physicians and surgeons in private practice.
4. Medical officers in public institutions, licensing boards, and industrial companies, as a result of physical examinations.
5. Notification.

The Section is of the opinion that in the future it may become necessary, in order to secure complete and continued treatment of every infected person,

to adopt compulsory notification of venereal diseases, though educational measures and public enlightenment may render this unnecessary.

(*b*) Provision of treatment, free of cost to the patient, to include the following:

1. Distribution of officially approved anti-syphilitic remedies to physicians under such regulations as may be designated.
2. Dispensaries with equipment and personnel.
3. Advice and treatment by private practitioners, acting as agents of the State.
4. Legislation against treatment by unqualified persons under conditions specified by the State.

(*c*) Control of infected individuals.

1. Instruction to patients.
2. Hospitalization in certain stages.
3. Isolation, complete or partial, according to the special circumstances of each case.
4. Requirements for discharge from supervision.
5. Penalties for exposing others to infection.

IV. Measure for accurate observations and recording of data relative to efforts to combat venereal diseases on lines already established by the following:

(*a*) Investigations by voluntary organizations such as:

1. American Social Hygiene Association.
2. National Council for Combating Venereal Diseases in Great Britain.
3. Association for the Abolition of the White Slave Traffic, etc.

(*b*) Investigations and reports of official bodies such as:

1. Royal Commission on Venereal Diseases of Great Britain.
2. Australian Commission.
3. U. S. Inter-Department Social Hygiene Board.

(*c*) Inspections and data of administrative bureaus.

1. Local Government Boards of Great Britain, The United States Public Health Service.
2. State Bureaus of Venereal Diseases.

(*d*) Miscellaneous Agencies.

1. Armies and Navies.
2. Statistical Bureaus.
3. Hospitals and Dispensaries.

V. Measures for furthering research upon venereal disease infections and the demonstration of new methods for combating venereal diseases, such as:
   (*a*) Research for better methods of diagnosis of syphilis and of gonococcus carriers among women.
   (*b*) Research for better or cheaper methods of treatment.
   (*c*) Research for more practical methods of determining a cure in syphilis or gonococcus infections, and additional information on which to base statements regarding future infectious stages.
   (*d*) Research regarding possibility of differentiating strains or types of *Spirochaeta pallida.*
   (*e*) Research regarding possibilities of immunizing individuals against syphilis or gonorrhea.

VI. Measures for Education.
   (*a*) Education of medical Students, practitioners, nurses and attendants.
   (*b*) Social workers.
   (*c*) Moral and Religious Workers.
   (*d*) Legislative Authorities.
   (*e*) The general public.

The details of such measures are so largely concerned with work which a Central Bureau could promote that the subject is given first consideration in Section II below.

SECTION II.

The activities of the Central Bureau in connection with the above scheme should comprise the following:

A. Education.
B. Research.
C. Multiplication of centers of activity.

To consider those more in detail:

A. Education should provide for:
   1. Students.
   2. Doctors.
   3. Nurses.
   4. Social workers.
   5. Moral and Religious workers.
   6. Legislative authorities.
   7. General Public.

A. 1. Students. Impress on legislatures in all countries where such do not exist, the importance of making the study of venereal diseases compulsory in all medical curricula, and to impose a test proficiency.

A. 2. Doctors.

(*a*) Establish a system by which workers could study the methods of other clinics.

(*b*) Provide a system by which teachers may be exchanged between clinics.

(*c*) Form a central museum to include:

1. Models of clinics.
2. Apparatus, clinical and laboratory.
3. Painting and models illustrative of micro-organisms.
4. Provision for the demonstration of technical methods such as laboratory technique.

(*d*) Form a Central Reference Library.

(*e*) Circulate a bulletin and pamphlets on special subjects. These would be compiled centrally from contributions from correspondents in each country. Such publications might usefully contain a critical review on particular sections of the subject. Publications to be in French and in English.

(*f*) Provide post-graduate courses at Central Bureau, and facilities to doctors to attend by securing reduction of fares and tariffs in connection with such visits or by grants-in-aid.

A. 3. Nurses.

(*a*) Include a Nurses' section in Central Museum and Library.

(*b*) Include Venereal Diseases in a Nurses' Bulletin which would also deal with Child Welfare, Tuberculosis, etc., so far as they concern nurses.

(*c*) Provide facilities for study or teaching in other centres.

(*d*) Provide facilities to visit the central institution, as in the case of doctors.

A. 4. Social Workers. The facilities provided for such workers should be similar in principle to those already outlined for nurses.

A. 5. Moral and Religious Workers. Expound in communications to moral welfare agencies the fact that religious and ethical principles underlying social conduct are an important factor in the preservation of health and social welfare generally.

A. 6. Legislative authorities. Expound in communications to members of such assemblies the economic and social value of physical health to the nation.

A. 7. General Public. This subject should properly be included in the section dealing with popular hygiene, not presented as a subject in a class by itself.

(*a*) Lectures. Assist local societies by provision of cinema films and slides. In countries where no organization for lectures exists, these could be be provided by the Central Bureau.

(*b*) Posters. Provide posters illustrating in a popular form the salient facts of preventive medicine, including Venereal Diseases. These could be provided free or at cost to local authorities.

(*c*) Contributions to Local Museums. Make contributions to local museums on same lines as posters.

(*d*) Newspaper articles. Supply articles by the best available writers to the Press for publication. These articles would comprise all subjects connected with preventive medicine beside venereal diseases. It is probable that, beside the large metropolitan weeklies, country newspapers would gladly accept such articles.

B. Research.

Initiate research on new lines suggested by reports collected centrally.

C. Stimulate the Multiplication of Centers of Activity by:

1. Payment of selected lectures where such are not provided by local or national societies.
2. Payment for contributions to museum, central library and bulletin.
3. Payment for posters.
4. Providing for newspaper and magazine articles.
5. Grants-in-aid of travel to the Central Bureau.

In the application of any such comprehensive scheme, the State should be responsible for the measures enumerated in Section I under I (*e*) II, and III, and should encourage the measures suggested under Par. V.

SECTION III.

The initial work in the field of combating venereal diseases which may be undertaken by this Central Bureau should comprise:

1. The preparation for presentation to all national Red Cross Societies of a digest of the laws and schemes for combating venereal diseases which are operative in the several countries.
2. The promotion of popular propaganda of the social hygiene campaign as set out in Section IV of this report.
3. The preparation of an appeal to be addressed to all legislative bodies asking them to require the inclusion in all medical school curricula of instruction relative to the treatment and control of venereal diseases.
4. Provision for carrying out the proposals under Section II A. 2(*a*), (*b*), A. 3 (*c*), A. 4 in so far as it provides facilities for study or teaching in other centres, A. 5, A. 6.
5. Provision of aid as specified in Section II C. 1, 3, 4, 5.

SECTION IV.

The following recommendations as to the form of popular propaganda which may be undertaken at once by the Central Bureau are intended to be suggestive merely of ways in which such a bureau could be of service to national Red Cross and other agencies combating venereal diseases, and could save much time and expense now required for the independent origin and development of propaganda methods and material in each country.

The Bureau could do the following.

1. Assemble, classify and present to the National Red Cross Societies the approved propaganda literature from the several nations which are active in this field.
2. Prepare suitable cinema films and adapt them in details and language to the several countries.
3. Furnish the material for articles for newspapers, magazines, trade journals and other publications.
4. Provide posters illustrating in a popular way the salient facts relative to venereal diseases and the social hygiene movement.
5. Furnish satisfactory lecturers or experts who could attend important national conferences in countries where further progress requires the stimulation of such persons.

SECTION V.

Recommendations as to the best method of presenting the subject of venereal diseases before the International Red Cross Convention at Geneva, are likewise submitted as illustrative rather than as a final opinion upon the most effective way to accomplish this.

1. It is believed that a statement should be prepared showing the evil effects of venereal diseases on the physical, moral and economic welfare of the world, and the general principles underlying a world-wide campaign. This statement should be supplemented by an outline of the respective parts to be taken in the campaign by the nation, state, community and the individual. Summaries of practical work already done and results achieved, as illustrated by exhibits, reports and propaganda literature, should accompany the statement.

2. The presentation of the statement should be followed by a proposal to establish a special section of the Central Bureau with adequate financial support and personnel to deal with the venereal disease problem.

3. In order to carry out these recommendations most effectively it is suggested that an invitation be extended to one or more experts to attend the convention to present in person the programme as herein set forth.

4. It is also suggested that one or more persons should be assigned immediately to the task of assembling materials and preparing the exhibits and the data upon which the statements described must be based.

Resolutions of the Section on Venereal Diseases Adopted by the Section and Presented to the Conference.

The scientific and social facts underlying the epidemiology of the Venereal Diseases—syphilis, gonococcus infections and chancroid particularly—are known. Although in many countries efforts have been made for the prevention and adequate treatment of Venereal Diseases, there is at the present time need for still greater action. It is because these diseases are so insidious in their attack, so indirect in their methods of maiming and killing their victims, so prevalent and so gradual or secret in their development of conditions which hopelessly impair the individual or make him a carrier of disease to others, that the public has only recently begun to realize that an organized defense against them is necessary and possible.

The importance of a comprehensive programme against syphilis and gonococcus infections cannot be over emphasized, for it is known to-day that these diseases are the direct or indirect cause of many chronic, organic, as well as mental diseases, including general paresis. It is known to be the cause of many miscarriages and still-births.

In view of these facts, the following resolutions are recommended:

I. Resolved: That the full report of the Section on Venereal Diseases be accepted and placed on file for future reference and guidance.

II. Resolved: That any comprehensive scheme for combating the Venereal Diseases must embody the following general principles:

1. Measures for the protection of individuals not yet infected.
2. Measures for the elimination of conditions of environment favouring dissemination of Venereal Diseases.
3. Measures for the discovery, treatment and control, where necessary, of individuals already infected.
4. Measures for accurate observation and recording of data relative to efforts to combat these Diseases.
5. Measures for furthering research, and for the demonstration of new methods for reducing their prevalence.
6. Measures for education.

III. Resolved: That as initial measures in the administrative control of Venereal Diseases, there should be instituted facilities for laboratory aid in the diagnosis of syphilis and of gonococcus infections, adequate methods of medical treatment and of follow-up service for infected individuals, measures for reducing exposure to infection by every practicable means, and a programme of education for all.

IV. Resolved: That every nation should be urged through proper channels to promote general propaganda for the control of syphilis, gonorrhoea, and chancroid, and that the Red Cross Societies should be ready to participate in or aid the activities of existing agencies engaged in this field of work.

V. Resolved: That as soon as possible the Central Bureau of health of the associated Red Cross Societies should establish a section to facilitate the rapid development of practical campaigns for combating Venereal Diseases, and collect and disseminate information upon such important matters as the notification of Venereal Diseases to health authorities, the repression of prostitution, the

abolition of the White Slave Traffic, the isolation of infected individuals, the protection of marriage, the control of alcohol and habit-forming drugs, and upon other factors relating to the epidemiology of Venereal Diseases.

MEMBERS OF THE SECTION ON VENEREAL DISEASES.

Chairman—Dr. Ducrey. *Alternate*—Col. Snow.

Great Britain—Col. Harrison, Dr. Menzies, Sir Arthur Newsholme.

France—Dr. Milan, Dr. Roux.

Italy—Dr. Ducrey.

Japan—Dr. Kabeshima, Dr. Nawa.

United States—Col. Russell, Col. Snow.

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Report Adopted and Presented to the Conference by the Section of Tuberculosis

Recognizing the wide prevalence of Tuberculosis, its incidence at all ages, and its great importance as a cause of excessive mortality, disability, distress and economic loss, we recommend that special attention be given to the fight against this disease in the plan of an organization having in view common action on the part of Red Cross Societies.

I. We believe that in any organized campaign against Tuberculosis the following factors are fundamental and indispensable:

(1). Dispensaries on an adequate scale, furnished with laboratories and appropriate equipment and affording provision for early diagnosis, including the examination of contacts by expert physicians; and with especially trained visiting nurses, who will carry into the homes of patients the necessary care, instruction and advice, who will especially consider the needs of children, and who will direct the patient to appropriate agencies for this purpose.

(2). Provision for the careful, regular inspection of school children with a view to the early detection of Tuberculosis.

(3). Hospital treatment, on an adequate scale, of acute, advanced and hopeless cases of Tuberculosis, separated from other cases not infected with Tuberculosis.

(4). Sanatorium facilities for all suitable cases of Tuberculosis.

(5). Continuous popular education regarding Tuberculosis, its causes and prevention, by all suitable means and agencies.

II. It is evident that Tuberculosis is inextricably associated with the general living and working conditions of the people; and we therefore recommend the encouragement of all legitimate efforts directed towards the improvement of these conditions. We regard as of particular importance in this connection, the care of children and the problems of housing, of cleaning, of nutrition, and of alcoholism.

III. We recommend the institution of appropriate measures to prevent the transmission of Tuberculosis through infected milk.

IV. We approve the establishment of open air schoools for the accommodation of children already infected by, or suspected of, Tuberculosis; and measures should be taken to protect children against contagion in the household by placing them with healthy families in the country or in special asylums, when it is not practicable to remove the infected patient from his family.

V. We call attention to the importance of the extension of the open air principle to all institutions and places where many individuals are housed together, such as barracks, orphanages, workhouses, penitentiaries, and the like.

VI. Experience has shown us the importance of careful supervision of the Tuberculosis patient during the entire period of his illness. We therefore urge the need for close co-operation between the several institutional factors (dispensaries, hospitals, sanatoria, etc.,) and the more extended development of skilled social service under medical direction.

VII. We think that attention should be drawn to the great risk to which Tuberculosis patients are exposed through the exploitation of alleged cures without scientific authority.

VIII. Inasmuch as a problem of particular difficulty is that of providing suitable occupations for those patients with Tuberculosis, able to perform a certain amount of work under favorable conditions, we recommend the encouragement of efforts for the establishment of agricultural colonies and the organization of suitable industries which should be linked with the dispensaries and sanatoria under medical supervision.

IX. Recognizing that accurate knowledge of the distribution of Tuberculosis is an essential preliminary to its control by public authorities in any community, we approve the principle of compulsory notification of Tuberculosis to the health authorities under appropriate regulations.

X. We call special attention to the capital importance of scientific research in the field of Tuberculosis and the collection of information as to all factors bearing upon the prevalence and distribution of the disease.

NOTE.—The recommendations of this report form also the resolutions of the Section.

MEMBERS OF THE SECTION ON TUBERCULOSIS:

Chairman—Professor Calmette; *Alternate*—Sir Robert W. Philip.

Great Britain—Sir John Lumsden, Dr. Menzies, Sir Arthur Newsholme, Sir Robert W. Philip.

France—Dr. Bernard, Professor Calmette, Professor Courmont, Dr. Rist.

Italy—Col. Baduel, Lt.-Col. Castellani, Professor Maragliano, Dr. Marchiafava, Dr. Poli.

Japan—Dr. Kabeshima, Dr. Nawa.

United States—Drs. Baldwin, Biggs, Farrand, Garvin, White and Lt.-Col. Williams.

Report Adopted and Presented to the Conference by the Section of Child Welfare

CHILD Welfare is an essential part of a general programme in public health and preventive medicine, and cannot be separated from them. It is particularly closely associated with housing and food production and supply, for children require food not merely for sustenance but for growth.

Children, as the weakest members of the community feel first, and feel most heavily, the effect of all unfavorable hygienic, social and economic conditions. The war has increased infant and child mortality: in some countries the birth rate has been lowered more than one-half. The health of many children who have survived has become greatly impaired by reason of improper food and neglect. Furthermore, the war and recent epidemics have enormously increased the number of dependent children, especially in the devastated countries.

A reduced birth rate and an abnormal sickness and death rate may be expected to continue for several years to come; a reduced birth rate owing to the death of potential fathers, to social and to economic conditions which have affected the health of potential mothers, and to many other factors: an increased sickness and death rate because of the scarcity and high cost of food, and general hardship and privation which favor the spread of epidemics and lower resistance to all forms of disease. A world-wide Child Welfare campaign is therefore one of the most pressing needs of the day, both from the humanitarian and economic standpoint as children are the nations' greatest assets.

The pressing problems now are:

1. To save the infants yet to be born and to promote their healthy development.

2. To restore the health and make possible the normal growth and development of children who are now suffering from disease or defective nutrition, and to safeguard the health of those whose nutrition has not yet suffered.

3. To do something for the immediate needs of dependent children.

Experience has shown that no efforts in public health work produce more immediate and far-reaching results than those which are put forth in Child Welfare.

The work relating to Child Welfare may be divided into six parts corresponding to the period of child life to which it is directed:

1. Eugenic considerations affecting the prospective parents.

2. The pre-natal period, in which the child is saved through care of the mother.

The importance of this may be appreciated by the fact that even in the highly civilized countries in peace times:

(*a*) The still-births are equal to between four and five per cent. of the living births.

(*b*) That as a result of pre-mature birth many infants die in the first weeks of life.

(*c*) That other causes of the high mortality during the early weeks are due to conditions affecting the mother.

Methods of pre-natal care will necessarily differ in urban and rural communities, and also be modified by race, customs and environments. The essential feature must be the supervision and education of the expectant mother by a well-trained public health nurse, health visitor or midwife from an early period of her pregnancy, aided when possible by the advice and assistance of a physician. The work is greatly facilitated by voluntary registration of pregnant women, which should be encouraged everywhere, and it tres.

Success in any effort in child welfare is largely dependent upon the intelligent co-operation of both parents; no plan of education therefore is complete which does not include the father. This is particularly important in the pre-natal period and in the period of infancy.

3. *Obstetrical Care.*—This should include the services of a nurse as well as those of a physician or mid-wife. Proper care saves the child from accidents during delivery, saves the mother from immediate and remote dangers incident to her confinement, greatly increases the chance of successful breast feeding, and prevents much blindness.

4. *Birth to School Age.*—This period is sometimes divided into infancy—including the first year or possibly two years—and the pre-school age, extending from this time up to five or sometimes six years.

The important concern during the first two years is the child's nutrition; and the essential thing is that the child be kept under continuous observation and supervision. Everything possible should be done to promote breast feeding as by far the most im-

portant means of insuring vigorous growth and development and preventing infant mortality. At first the supervision must be close, the infant being seen in many cases every week or even oftener. The visits will be less frequent as the child grows older, being made at least monthly after six months, and every two months up to the end of the second year. Success during this period depends almost entirely upon our ability to educate the mother, and to arouse and maintain her interest in her child's growth and progress.

The principal methods are:

(*a*) Group instruction and individual advice in a central place known as a "milk station," a "child welfare station," a "consultation," etc., and,

(*b*) Home visiting by Public Health nurses or health visitors.

Both methods have their place and should usually be combined, certainly in urban communities.

The problem of infancy up to the school period is much the same and can be carried on with the same organization—a quarterly visit to the home or by the child to the central station, and a full medical examination once a year should be the minimum. Much better results would be obtained if the observations were made more frequently. The above requirements should be for every healthy child. Those who are delicate or ill should have special medical attention.

By these means, the beginnings of organic disease may be detected, physical defects and deformities prevented or corrected, and a general supervision maintained over the child's diet and general hygiene.

Records should be kept of all abnormal conditions, any serious illness, also of weight and height, which will themselves furnish a good guide as to health progress.

Permanent institutional care for infants and young children should be discouraged on account of the almost insuperable difficulties in maintaining nutrition in infancy under these conditions, and because of the great susceptibility of young children to infection; preference should be given to placing such children in suitable families. All creches, day nurseries and the like should be under close medical attention.

5. *The School Period.*—Six to fourteen or sixteen years. The problem during this period is to secure normal growth, physical and moral development, to recognize and correct defects which interfere with these, and to reduce to the minimum the risks of contagious disease. The school physician, the school nurse and the school teacher all have important functions. The school further-

more offers an opportunity, the value of which is only beginning to be appreciated, to interest, instruct and train the child himself in health matters. It should be as much the duty of the schools to teach health, as to teach reading and writing. Health work for the school child is inextricably bound up with the problems of general education, and all teachers should receive training which would qualify them to teach the simple facts of health and personal hygiene.

An important kind of health education which can be carried on in the schools is the instruction of girls from the age of ten years upwards in the rudiments of infant care. This has been proved to be valuable in preparing them to undertake the responsible charge of their younger brothers and sisters and what is even more important in assisting to prepare them for the future duties of motherhood.

The child's mind is virgin soil for health instruction of every sort. It is not necessary at this period to clear away the rubbish of prejudice, superstition and habits based upon ignorance, which make health education so difficult and often so futile in adult life. Scientific facts in regard to food, health habits, hygiene and the spread and control of disease, can, if presented by writers and artists who know how to reach the child's mind, be made interesting and attractive. Why should not the stories of the conquest of small-pox, malaria or yellow fever be made as thrilling as the conquests of Alexander or Napoleon?

This instruction should be begun with children of eight or nine, for early impressions are the most lasting. The bare facts of hygiene or physiology as presented in school textbooks make little impression that is permanent. Their acquisition is made work. Health instruction should and can be made play; health may even be made a competitive game. If the school children can be properly instructed in health matters, we need have little anxiety about the adults of the next generation.

Progress in the pupil's health is best shown by the weight record; thus an incentive can be furnished for the observance of health rules which are taught.

Health records, at least a record of weight and growth, should be kept during school life. In an ideal school, a medical examination should be made once a year of every school child; and all who are found to be physically below normal or who do not make a normal gain in weight should reecive special attention and supervision during their school life.

6. *Industrial period.*—14 to 18 years. In connection with legislation relating to child labor, the following fundamental principles should be embodied:

(*a*) No child should be allowed to enter into industry without first passing a physical examinaton by a competent physician, showing that he is able to perform the work intended.

(*b*) No child should be permitted to continue in any form of work which prevents his normal growth and physical development, as determined by accepted standards and periodic examinations made up to the age of 18 years.

Any intelligent action must be based upon an exact knowledge of conditions. Therefore, the first step should be a survey.

After a survey has been made, in any activities which are contemplated there are certain fundamental principles which should be kept in mind if the work is to be effective and anything permanent accomplished.

(1) Local customs, climatic conditions, diet and other things upon which are based the habits of the people, should be carefully considered and appreciated.

(2) All local health habits and racial customs, which are good, should be accepted and used as a foundation on which to build.

(3) It is impossible to formulate beforehand a plan of procedure which can be closely followed. Any plan adopted must have great elasticity and be modified by circumstances as they arise in the course of the work.

(4) Local agencies, organizations and individual workers should be developed and utilized so far as possible.

(5) The utmost tact is necessary to adapt knowledge and experience gained elsewhere to work which is instituted under new conditions and among new people.

(6) No plan of work should be made so complex or so expensive that it cannot be duplicated or extended by a simple organization elsewhere.

(7) Success depends much less upon the programme adopted than upon the personnel which will put it into effect.

(8) To carry out effectively any scheme of Child Welfare such as has been outlined, it will be necessary to provide material assistance in a considerable proportion of cases.

RESOLUTIONS OF THE SECTION OF CHILD WELFARE ADOPTED BY THE SECTION AND PRESENTED TO THE CONFERENCE.

1. That the Conference is of opinion that the promotion of Maternal and Child Welfare should form an important part of the activities of the proposed Central Bureau of Health and of national Red Cross activities.

2. That the most urgent initial work is the consideration of emergency action rendered necessary by the war. In countries where there is little or no Red Cross organization the Conference regards the organization of surveys of needs and the establishment of centres at which intensive work can be undertaken as promising the most rapid results. These centres should be handed over to the local or governmental organizations when this can be done.

3. That statistical investigation of the local incidence of child mortality and the preparation of standardized statistics are urgently needed in every country; and for this purpose active propaganda in favor of complete registration of marriages, births, including still-births, and of deaths, should be instituted in countries in which this is not already established.

4. That as soon as possible adequate popular propaganda should be begun:

(*a*) Calling attention to the conditions and needs of less favoured countries;

(*b*) Appealing on behalf of dependent children; and,

(*c*) Urging the need for immediate Child Welfare work in devastated regions.

5. That the collection of information bearing on Child Welfare and the distribution of this to national Red Cross societies should form an essential part of the work of the Central Bureau. This information should not only be statistical, but should include also the results of investigations and the reports of promising developments in administration and methods bearing on Child Welfare in any country.

6. That research work on Child Welfare should be encouraged by the Central Bureau.

MEMBERS OF THE SECTION OF CHILD WELFARE.

Chairman—Sir Arthur Newsholme.

Great Britain—Professor Kenwood, Dr. King, Sir Arthur Newsholme.

France—Doctors Armand-Delille, Péhu, Pinard.

Italy—Col. Baduel, Col. Valagussa.

Japan—Dr. Kabeshima, Dr. Nawa.

United States—Doctors Hamill, Holt, Lucas, Talbot, Miss Wald.

The Red Cross and the Situation in Europe

At the first meeting of the International League of Red Cross Societies held at Geneva in the first week of March, the conditions in Europe were fully discussed. No account of the meeting, except by cable, has yet reached Canada, but the Canadian Red Cross Society has received from Sir David Henderson, Director-General of the League, the following message, which shows the attitude adopted by the League of Red Cross Societies towards this terrible problem.

The delegates representing the Canadian Red Cross Society at this conference were Lady Drummond, Sir Richard Lake, Mr. R. B. Bennett.

CABLE:

The President of the League of Nations in a letter to the League of Red Cross Societies stated: "Ravages inflicted by disease on war-worn underfed populations of Central Europe, to say nothing of regions further east, are of such magnitude that no organization less powerful than the League of Red Cross Societies seems adequate to cope with them. I venture to urge League of Red Cross Societies to organize effort worthy of its unique position." In consequence of this message, the following resolutions were passed by the General Council of the League of Red Cross Societies: "Upon assurance from the League of Nations that food, clothing and transportation be supplied by Governments, League of Red Cross Societies will formulate immediately plans for immediate extensions of voluntary relief in affected districts and appeal through Red Cross Societies which are members of the League for doctors, nurses, supplies, food and money required." Further, it was resolved that each delegation present at the General Council engages on notice received from the League to urge its own organization to take steps in its own country as will best ensure success of the undertaking. Canadian delegates left Geneva with full information.

(Sgd.) SIR DAVID HENDERSON.

Canadian Medical and Public Health Congress, Vancouver, week of June 21st, 1920. Plan now to attend.

Syphilis and Gonorrhoea from the Public Health Point of View

By R. R. McClenahan, B.A., M.B., *Provincial Board of Health of Ontario.*

As a great deal of interest in syphilis and gonorrhoea has been aroused of late years, and as the seriousness of these diseases with the resulting less to industry, has been brought to the fore, the measures being taken from a public health standpoint by the Provincial Board of Health of Ontario, will, no doubt, be of interest to the profession.

On the advice of the Provincial Public Health officials the medical profession and prominent social workers throughout Canada, the Canadian Government made a grant of $200,000 (this to be a yearly grant to last for at least three years, if conditions warrant it) towards combating venereal diseases. This grant was divided among the Provinces according to population, and was given on the understanding that the Provinces would advance an equal amount. $10,000 of this grant was made to the Dominion Canadian National Council for combating Venereal Diseases, a voluntary organization, whose aim is along the lines of education, advertising and propaganda. The share allotted to the Province of Ontario was $57,473.68.

The Ontario Government advanced an equal amount, making the total sum of $115,000 available for the campaign in Ontario.

A Division of Venereal Disease is being organized. This bureau will have charge of the effort of the Provincial Board of Health. It is proposed to divide the campaign into two heads:—

(1) Education.

(2) Treatment.

Education.—The most important part of the campaign is education along public health lines. This education will be general in character. It will embrace the medical profession, dentists, druggists, nurses, public men and business officials, social workers, and the general public. A very excellent scientific book called "To-day's World Problem in Disease Prevention," written by Dr. John A. Stokes, of the Mayo Clinic, is now in the printer's hands, and will shortly be available for all medical men free of cost. This book takes up the venereal diseases in a practical and interesting

way, and will, no doubt, be of great value to medical men throughout Ontario.

Pamphlets and bulletins are in course of preparation for dentists, asking their support, and also for druggists, enlisting their support to fight the dangers of quacks and self-treatment.

The Venereal Diseases Act and the Regulations are being strengthened and improved so that the treatment of these diseases may be made more efficient.

Pamphlets will be printed suitable for all classes, including nurses, social workers and the home. Lecturers will be sent out where desired to put the dangers of these diseases fairly before the public. There will be an advertising campaign carried on in newspapers and periodicals in Ontario. It is also proposed to show films from time to time on the venereal problem. The Canadian National Council for combating venereal diseases has such a film which will be shown very shortly throughout Ontario. All available methods for placing the Venereal Problem before the public will be used.

Treatment.—No campaign of this character, however, can be complete unless adequate free treatment is provided as well. At the present time all cases of Venereal Diseases in reformatories and prison farms, etc., are being treated by a specialist, medical officer employed by the Provincial Board of Health. All inmates of prisons, reformatories, jails, etc., are examined for venereal disease—smears are taken on all women and on men if considered advisable. All inmates have Wassermanns taken on admission. All cases are treated and kept in institutions until considered safe from a public health standpoint, whether this necessitates their being kept over their time or not. These cases when set free are referred to the local Medical Officer of Health for further treatment or observation as necessary.

A license to manufacture an arsphenamine product has been given to the Board. Through it the Board has power to sell or give free of charge an arsphenamine product to its clinics and also to hospitals and institutions throughout the Province. It is expected that the product will be available in two months' time.

The Board is arranging to establish special treatment clinics in the larger cities throughout the Province for the free treatment of Venereal Diseases. These clinics are being very generously dealt with, and it is hoped that the treatment they will be able to give those infected and in need of free treatment, will be of help in preventing the spread of these diseases.

The following proposition is being presented to the municipalities where, in the opinion of the Board, a clinic is advisable. A schedule of apparatus and furnishings suitable for the adequate treatment of these diseases has been drawn up and will be part of the standard equipment required before Government aid will be given the clinic.

The Board feels that the choice of a site for the special clinic or clinics in the various municipalities should be left to a certain extent in the hands of the local authorities, who understand local conditions. The Board would suggest, however, that where facilities already exist as in the case of hospitals, etc., other things being equal, these facilities should be used. The Board will afford the following assistance to each clinic established:—

(1) For the purchase of furnishings and apparatus for a special clinic—$1,000. (It is thought that the cost of the apparatus and furnishings will not exceed this amount.) Where a clinic is already in existence and up to the standard the same financial assistance will be given.

(2) To assist in the payment of a social service nurse, $500.00 yearly.

(3) For each out patient treatment for gonorrhoea—50c.
For each out patient treatment for syphilis —50c.
(No more than one treatment each day will be paid for.) For each out patient treatment for syphilis in addition, free "salvarsan" will be provided—as soon as the Board is in a position to furnish its own product.

(4) In the case of patients treated in the hospitals the sum of 25c. in addition to the foregoing grants will be paid to the hospital for each day of indoor treatment up to three months, at the end of which time the indoor grant will cease.

(5) Standard record forms for the use of these special clinics will be supplied by the Board.

In return for this assistance the Board will require that the clinic will be kept up to a certain standard as follows:

(1) The special clinic shall be for the treatment of venereal diseases.

(2) The apparatus and furnishings for the clinic shall be as follows:— (See Schedule (a)).

(3) The personnel of the clinic shall be:

(a) One specialist in venereal diseases, who shall be appointed by the hospital if the clinic is in connection with a hospital and by

the local Board of Health in other cases. This officer must also be satisfactory to the Provincial Board.

(b) Such Medical assistants as may be necessary shall be appointed on the same basis.

(c) One full time social worker who shall be a graduate nurse.

(d) One clerk, if the clinic is treating more than forty cases per week.

(e) One male orderly.

(f) If possible, one undergraduate nurse to assist in the clinic.

(4) All treatment in the clinic shall be free.

(5) At least one night and two day clinics shall be held per week. (This may be modified on agreement.)

(6) Separate hours shall be set aside for men and women in the clinic, also if possible, separate hours for the treatment of gonorrhoea and syphilis.

(7) Weekly reports will be required on forms supplied by the Board.

(8) The clinic, including its records, apparatus, method of treatment, etc., shall be open to inspection by the Board.

(9) The municipality will be expected to advance an amount for upkeep of the clinic or clinics which shall be approximately equal to the amount advanced by the Board. (See Section 14, subsections 1 and 2, Venereal Diseases Prevention Act.)

(10) The social service nurse shall follow up cases outside the clinic to see that all patients continue treatment and also that any possible contacts are examined.

(11) Accounts should be rendered at the end of the month and will be paid on the Board's certificate.

(12) The Board reserves the right to modify these rules if such should, in the interest of the clinic, be deemed necessary.

In conclusion the Board wishes to express its appreciation for many valuable hints on the subject given by many of the medical men in Toronto, and elsewhere, who have given a great deal of their time gratuitously in this work. The Board feels that special mention should be made of the work of Professor Duncan Graham, Professor Fitzgerald, Dr. Edmund King, Dr. Gordon Bates and many others.

This campaign can only be a success through the closest cooperation and assistance of the medical profession throughout Ontario, and the Board feels that this will be given freely.

You cannot afford to miss the *Congress* in Vancouver in June.

A Plan for a More Effective Federal and State Health Administration

FREDERICK L. HOFFMANN, LL.D.
Third Vice-President and Statistician the Prudential Insurance Company of America

(*Continued from the February issue*).

Much valuable assistance in behalf of this requirement is being rendered by occupational disease clinics, such as have been established in New York, Boston and Philadelphia.*

Race Pathology and Tropical Hygiene

The suggested section on race pathology touches a field which has heretofore received decidedly inadequate consideration. Aside from the obvious necessity that more scientific attention should be given to the problem of negro mortality in the Southern States, affecting a population of more than ten millions, economically of the utmost importance to the Southern agricultural and industrial interests, the more restricted fields of inquiry into the disease peculiarities of our native Indians, of the Orientals and Mexicans residing within our borders, of the numerous races, pure and mixed, in the Hawaiian Islands, and of the natives of Porto Rico, the Virgin Islands, etc., all suggest the necessity for a separate division of work, in charge of a thoroughly trained expert, whose work should be coordinated, as far as practicable, to the corresponding efforts of the Committee on Race in Relation to Disease of the National Research Council.†

*In curious opposition to its earlier interest in the reporting and of compensation for occupational diseases the American Association for Labour Legislation now minimizes the urgency of legislative action, on the ground that such compensation can adequately be provided for only through compulsory health insurance. The insincerity of this change in view-point is obvious. The present injustice of non-compensation for occupational diseases is not remedied by the promise held out that some time in the future compulsory health insurance may come into existence. Whether occupational diseases in the legal sense are rare or frequent is quite immaterial, as emphasized in the arguments in favour of Federal legislation prohibiting the manufacture of poisonous matches. The small number of deaths resulting from phosphorus necrosis was not a proper argument against the justice and expediency of such legislation. The reason why the American Association for Labour Legislation now makes light of occupational disease compensation is because if such compensation were to become universal no argument whatever would remain for the wrongful proposition that industry should be charged to the extent of two-fifths with the burden of compulsory health insurance for sickness not directly or specifically attributable to occupational activities.

†As a convincing illustration of the thoroughness with which certain problems of tropical medicine are at the present time being considered by our government medical officers, reference may be made to a recent treatise on "Tropical Surgery and Diseases

It is most regrettable that there should thus far not have been a much more active interest in the broader problems of tropical hygiene and sanitation. We require for this country an institute of tropical medicine and hygiene, conforming to the schools of tropical medicine of Liverpool and London and the Wellcome Tropical Research Laboratories of Khartoum and the Malay Institute for Medical Research. As a most promising indication of our progress in this direction, reference, however, may be made to the recently published reports and collected studies of the Institute of Tropical Medicine and Hygiene of Porto Rico for the period 1913-17, including among other contributions two exceptionally valuable papers on "Clinical Studies of Dengue", by W. W. King, and "Observations upon the Skin Diseases of Porto Rico", by the same author. The growth of our foreign commerce with tropical and semi-tropical countries makes it a foregone conclusion that in the near future a much larger number of Americans will be subject to more or less abnormal health and climatic exposure in countries regarding the pathology of which our information is quite fragmentary and otherwise unsatisfactory at the present time. Conversely, there will unquestionably arise a demand for experts in tropical hygiene and sanitation, trained in the United States, for service abroad. The object of the Liverpool School of Tropical Medicine, which was founded in 1898, was to promote "the study of tropical medicine by the investigation of diseases in tropical countries and of providing suitable training for medical officers and others proceeding to the Tropics". The terms of teaching include three courses of instructions annually, of three months' duration, consisting of, first, a daily lecture excepting on Saturdays and Sundays, second, practical laboratory work, third, clinical and pathological work at the Royal Hospital. The Liverpool School, founded in 1899, provides a more elaborate course, including a special section on the hygiene of the tropics, partly with reference to personal hygiene, chiefly the pathological or physiological effects of climates and seasons on the human system and the influence of hygienic surroundings and of habitation, food and drink, clothing, exercise, bathing, as well as rest, employment and recreation. There is a section on general hygiene, inclusive of such subjects as water and water supplies, food and principles of diet, milk, grain, soil removal and disposition of waste matter and the disposition of the dead. Finally, there is a third section on hygiene in relation to towns,

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of the Far East", by John R. McDill, M.D., Major, Medical Reserve Corps, U.S.A., London, 1918. This work includes extended observations on China and the Philippines and answers to a questionnaire of fifty-three inquiries sent to countries in and about the tropical zone. There is an exceptionally interesting section on cancer, which confirms the prevailing point of view that malignant disease is relatively very rare among native races.

houses, smoke, stables, hospitals, asylums, jails, leper settlements, factories, plantations, immigrant stations, pilgrim festivals or holiday gatherings, lodging-houses and pilgrim and coolie ships. While considerable progress has been made in this country, especially through the Harvard School of Tropical Medicine,* which has sent out several expeditions to South America, etc., there is the utmost urgency for much broader conceptions as to our national duty and interest in a matter which unquestionably will require more governmental consideration in the near future. If we are to sustain our position as a world power, we must begin *now* to train our men for world as well as for national service, and in no professional field is such training more essential than in tropical medicine and tropical hygiene.

*The Harvard School of Tropical Medicine has issued an unusually interesting and valuable report on its first expedition to South America, made under the direction of Richard P. Strong, M.D. The report includes investigations of the so-called Oroya Fever and Verruga Peruviana. There has also been issued a "Medical Report on the Rice Expedition to Brazil", by Dr. W. T. Councilman and R. A. Lambert, of the Harvard School of Tropical Medicine, Cambridge, 1918. This report is characteristic of perhaps the most useless form of superficial foreign investigations, typical rather of missed than of realized opportunities for scientific research. The report includes some very interesting and useful data, which have to be extracted with difficulty from a mass of irrelevant and almost puerile observations. To those who are familiar with the thoroughly scientific work of Spruce on the Amazon River, who suffered incredible hardships to leave behind a complete record of strictly scientific observations, it must but be a matter of regret that the medical observers attached to the Rice Expedition should not have utilized their exceptional opportunity to better advantage.

In marked contrast to the Rice report are the results of an investigation by Dr. H. Wolferstan Thomas on the Sanitary Conditions and Diseases prevailing in Manaos during the period 1905-09, being the Fifteenth Expedition of the Liverpool School of Tropical Medicine, and made available to me through the courtesy of the International Health Board. The practical utility of a thorough analysis of climatological morbidity data for Manaos and other localities of the Amazon river basin is clearly shown in the discussion of the inverse correlation of malaria, rainfall and wind force in my "Plea and Plan for the Eradication of Malaria Throughout the Western Hemisphere". The immense economic importance of malaria eradication of this section of South America is emphasized in a monograph on "Rubber in Brazil", by A. J. de Souza Carneiro, who points out that "the States of Para and Amazonas and the Acre Territory would long since have reached a population of 3,000,000 had it not been for the havoc that malarial fever and diseases of the digestive organs worked on a population that without even elementary comfort or medical assistance, risked their lives in regions so inhospitable". As a model of a brief but strictly scientific report on this area reference may be made to the "Notes on the Alto Rio Branco, North Amazonas", by R. H. Blake, in the *Journal of the Royal Geographical Society*, May, 1916. See also the preliminary report of the Irvin Expedition of the Indiana University to Peru and Bolivia, *Science*, August 2nd, 1918.

To be continued.

Social Background

Labour and Politics in the United States

THE policy in regard to political action of the American Federation of Labour is very different from that of the Trade Unionist movement in Great Britain. In England the policy has been to create a definite political group which would directly represent the labour viewpoint. The American Federation has been traditionally opposed to the formation of a labour party, and has confined its attention to securing its ends by industrial, not political action. It has, of course, frequently presented its recommendations in regard to legislation, which it desires, to Congress. It is finding it however, a difficult matter to maintain this non-partisan political policy, for Congress has usually the appearance of being politely bored when faced with demands not backed by political power. Mr. Gompers still controls the machinery of the Federation and has the support of the older leaders, but the younger men in the movemnt have become increasingly restive under this policy. In certain states they have already organized labour parties regardless of Mr. Gompers' attitude on the matter. This revolt of his own followers and the indifference of Congress to his demands, has placed him in an awkward position. He is still strongly opposed to the formation of a third party under labour auspices and the plan which he is adopting is that of endorsing and trying to elect the candidates of either the Democratic or the Republican parties which show themselves favourable to the claims of labour, and as a corollorary of this will endeavour to secure the defeat of labour's enemies. This campaign will begin in every state and the records of each public official or candidate will be scrutinized. In districts where both candidates are friendly no action will be taken, but in districts where all candidates are unfriendly, labour will put forward its own candidates.

The result of this effort will be watched with great interest. If the four million members of the Federation would follow the advice of their leaders, there is no doubt that they could control the outcome of the elections. The more radical members in Mr. Gompers' group predict failure for the plan and contend that the only satisfactory way to secure legislation which labour desires is

by the formation of a labour party which will directly represent labour's viewpoint in the political arena. At the last meeting of the American Federation of Labour, Samuel Gompers was re-elected President almost without a dissenting voice. That however, is not an accurate index of the general attitude of United States trade unionists, and there is a possibility that before the Presidential election actually takes place that Mr. Gompers will be politely waved aside and labour parties formed with candidates to contest the Federal and State elections. If this does not take place, and he and the conservative wing are able to maintain the policy at present laid down, unless this policy meets with a considerable amount of success, there is little question that the more radical members will make a determined effort to secure control of the American Federation with the idea of making a decisive change in its traditional policy. The Canadian Trade Unionist Movement has largely followed the British precedent. Its affiliations with the American Federation, however, have also been a powerful influence. Any decided change in policy in the latter would then be bound to react upon the Canadian situation. The trend of events then in the United States will be followed with great interest.

Special Lectures for the Neighbourhood Workers' Association

Given under the auspices of the Department of Social Service of the University of Toronto, 1920. The Lectures will be given in the Social Service Building, 8 Queen's Park, cor. College Street, Thursdays, 3.30-5.15 p.m.

COMMUNITY AND FAMILY PROBLEMS.

March 11th (1)

(a) Standards of Child Placing.
MRS. A. D. FISHER.

(b) The Rise in the Cost of Living as a Social Problem.
PROF. H. MICHELL, *McMaster University.*

March 18th (2)

(a) A Health Programme for Children of Pre-School and School Age.
MR. R. E. MILLS, *Department of Public Health.*

(b) Mental Defect as a Community Problem.
DR. E. J. PRATT, *University of Toronto.*

March 25th (3)

(a) The Child of the Unmarried Mother.

REV. P. J. BENCH, *Superintendent of Catholic Charities.*

(b) Case Treatment of the Unmarried Mother.

MISS HAZEL BELL, *Central Office N.W.A.*

April 1st (4)

(a) Juvenile Delinquency as a Community Problem.

JUDGE H. S. MOTT, *Juvenile Court, Toronto.*

(b) The Case Treatment of the Deserted Wife.

MISS MARY E. MCPHEDRAN, *Central Office N.W.A.*

April 8th, (5)

(a) The Neglected Child as a Community Problem.

REV. PETER BRYCE.

(b) General Principles of Social Case Work.

F. N. STAPLEFORD, *General Secretary.*

April 15th (6)

(a) What Social Workers Should Know About Their Own Community.

REV. M. C. MACLEAN, *President Central Council N.W.A.*

(b) State Care of the Widow and her Dependents.

DR. W. A. RIDDELL, *Deputy Minister, Department of Labor, Provincial Government.*

April 22nd (7)

(a) Social Work in Hospitals.

MISS KNISELEY, *Social Service Department, Toronto General Hospital.*

(b) Health Insurance and Maternity Aid.

MISS CHARLOTTE WHITTON, *Assistant Editor, Social Welfare.*

April 20th (8)

(a) The Outlook in Regard to Immigration.

PROF. GILBERT JACKSON, *University of Toronto.*

(b) Social Hour.

Canadian Medical and Public Health Congress, Vancouver, week of June 21st, 1920. Plan now to attend.

The Provincial Board of Health of Ontario

The 20,158 cases of influenza and pneumonia reported by the Local Boards of Health are by no means all that have occurred in the Province during the month of February, as quite a number of secretaries of Local Boards say many cases in their municipalities had not been reported. While the toll of death—(2,315)—may be considered heavy, it is not nearly so bad as in the first month when the epidemic invaded the Province in October, 1918, causing a little over 3,000 deaths. During the first month of the epidemic the disease had reached its highest point. A marked reduction began in the following months until the outbreak had disappeared from the Province. This will probably be the case this year.

The cases of small-pox reported show a decrease of 305, compared with the month of January, while scarlet fever shows a slight increase and diphtheria an increase in deaths of 14. The epidemic of measles continues, as may be seen by the Comparative Table.

CASES AND DEATHS OF COMMUNICABLE DISEASES REPORTED BY LOCAL BOARDS OF HEALTH FOR THE MONTH OF FEBRUARY, 1920.

COMPARATIVE TABLE.

	Feb., 1920		Jan., 1920		Feb., 1919	
Diseases	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*
Small-pox	883	9	1,188	6	41	0
Scarlet Fever	646	24	642	21	337	11
Diphtheria	551	84	636	70	329	32
Measles	1,625	36	1,296	16	21	1
Whooping Cough	168	23	162	19	42	2
Typhoid	42	16	42	12	12	3
Tuberculosis	201	183	145	135	226	144
Infantile Paralysis	2	1	2	0	.....	.....
Cerebro - spinal Meningitis	13	10	8	7	14	13
Influenzal Pneumonia	20,158	1,345	669	24	812	812
Primary Pneumonia	.....	970	.....	297	.....	.....
	24,287	2,701	4,790	607	1,834	1,018

NOTE.—The cases of influenza and Pneumonia for February, 1919, were not then reported.

JOHN. W. MCCULLOUGH.

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH FOR FEBRUARY, 1920.

Diseases	1920 *Cases*	1919 *Cases*
Syphilis	72	85
Gonorrhoea	84	153
Chancroid	2	5
	158	243

NOTE.—It is quite apparent the physicians are not reporting the cases as required by the regulations.

Sleeping Sickness was reported from the following places:

London	2 deaths
Woodstock	2 deaths
Warwick Township	1 death
Ancaster Township	1 death
Guelph	2 cases
Zurrich Township	1 case
Bastard and B.	1 case
S. Crosby	1 case
Embro Village	1 case
Westmeath Township	1 case
Inwood	1 case
Shallow Lake	2 (suspected)

Coming Soon.
National Membership Campaign for *1,000* Members.
You can help.

News Items

A Mental Hygiene Course for Social Workers will be given at the Social Service Department, University of Toronto, April 19th to June 11th, 1920. It is under the auspices of the Canadian National Committee for Mental Hygiene, and will be of a similar nature to that given in the Spring of 1919, when 85 students from all the Provinces of Canada were in attendance.

Instruction is designed to give an initial training that will enable the student to deal with social problems from the mental hygiene standpoint.

The Nineteenth Annual Report of the Canadian Association for the Prevention of Tuberculosis has just been issued and is as usual an interesting and complete survey of the year's progress in the fight against tuberculosis in Canada. The Report contains a complete account of the Proceedings of the meetings of the Association held in Ottawa in October, 1919. Included are interesting and valuable papers by Dr. J. H. Elliott and Dr. H. M. Tovell, of Toronto; Dr. W. J. Dobbie, of Weston, and the very stimulating reports of the President and energetic General Secretary of the Association, Dr. George D. Porter. Everyone should possess a copy and should peruse this most useful report.

A well attended meeting of the Executive of the Ontario Branch of the Canadian National Council for Combating Venereal Diseases, was held in the office of the Director of the Division of Venereal Diseases of the Provincial Board of Health, Toronto, on March 5th last. Dr. Chas. A. Hodgetts of the Department of Health, Canada, was elected President; Dr. D. G. Storms, of Hamilton, Vice-President; Dr. R. R. McClenahan, Provincial Board of Health, Parliament Buildings, Toronto, Secretary, and Mr. L. M. Wood, of Toronto, Treasurer.

Dr. George D. Porter, General Secretary of the Canadian Association for the Prevention of Tuberculosis, addressed a series of meetings in Prince Edward Island during the latter half of March.

Dr. C. K. Clarke and Dr. C. M. Hincks, of the Canadian National Committee for Mental Hygiene, were in Montreal and Quebec during March on the work of the National Committee. The Provinces of New Brunswick and Nova Scotia have requested the Committee to undertake Mental Surveys in those Provinces.

The Canadian National Council for Combating Venereal Diseases through the General Secretary, Dr. Gordon Bates, arranged for the showing of the Venereal Diseases propaganda film, "The End of the Road," in Massey Hall, Toronto, from March 29th, to April 2nd, inclusive.

Coming Soon.
National Membership Campaign for *1,000* Members.
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Editorials

PUBLIC HEALTH EDUCATION.

EDUCATION and publicity in public health work are essential. Such work should be done, not spasmodically, but continuously; not through one channel, but through many; utilizing to the full each and every method adapted to the end in view.

Personal contact is best. Practical demonstration more valuable than precept alone. Where neither are possible, we have still the educational film, newspapers, pamphlets, books or leaflets. A recent admirable public health book of great merit is, "To-day's World Problem in Disease Prevention," by Dr. John H. Stokes; issued by the Provincial Board of Health of Ontario. A more commendable dissertation on the public health aspects of syphilis and gonorrhoea has seldom been distributed.

All Health Departments, Federal, Provincial and Municipal, should endeavor to provide for a division of Public Health Education and Publicity. Otherwise, only haphazard public health educational and publicity efforts are likely to be made which will yield in the way of substantial results as much as such efforts usually merit!

What business can be successful to-day without advertising? We need to be as thoroughly familiar with what is good for us physically and mentally as we do with reference to the best tires for motor cars or the brand of soap we should use!

PUBLIC HEALTH IN NEW BRUNSWICK.

TO the Province of New Brunswick belongs the credit of being the first community to have a real Ministry of Health. England has recently adopted the same policy—Ontario has a portfolio of health in her new Farmers' Government, a Secretary of Health is one of the newest officials in Washington—but New Brunswick was first in the field, and the Hon. Dr. Wm. F. Roberts the first real genuine Minister of Health.

Progress in public health in New Brunswick has been spectacular. Only two or three years ago public health conditions in the province were at an extremely low ebb. The total expenditures on public health exclusive of the sum of $110,000 expended on the provincial asylum and $10,000 on hospitals amounted to the mag-

nificent sum of $1,600—spent on a contribution towards the salary of the health officer of St. John City, another towards the stipend of the Secretary of the Provincial Board of Health, and $600 for the provincial laboratory. The various municipalities paid out little or nothing. To jump in the space of less than two years from this modest expenditure to that of an annual sum of about $130,000 is a chapter in public health progress which is noteworthy indeed.

Public health organization in New Brunswick two years ago was poor. True, there were 32 Boards of Health under the supervision of a Provincial Board. This Board, however, existed more in name than in fact. Local Boards also were inefficient. Expenditures were not made in the name of public health, and practically no real public health work was done.

Such a condition of affairs demands a leader, and fortunately, in February, 1917, when Dr. Roberts was persuaded that his candidature in the local legislature would be to the country's interest that leader was found. Elected member for his riding he was appointed Minister without portfolio, and found himself in a position to give effect to the many progressive ideas and ideals which he was known to cherish as to the improvement of health conditions in his province.

The idea of a portfolio of Health with all its possibilities was new and novel. Dr. Roberts found that even his colleagues in the Government had to be converted to it, and ultimately his plan for the reorganization of health machinery in New Brunswick had to be fought through. Finally, however, ideas and ideals won out. In May, 1918, the Public Health Act was passed, and in October of the same year it was placed on the statute books.

The present organization consists of a Government representative, the Minister; Chief Officer of Health; Chief Medical Officer; Chief of Laboratories; five district Health Officers, all of which constitute what is known as the Bureau, which really was represented under the old regime by the Provincial Board of Health. On account of expense the two offices of Chief Officer of Health and Chief Medical Officer have been combined. The Province is divided into three districts.

The Bureau holds monthly meetings, and is truly representative of all the interests of the Department. Each of the three districts are sub-divided into sub-districts, each sub-district being coterminus with a county. The county organization is made up of a sub-district Board of Health of five members, three of whom are appointed by the county municipality and two by the Provincial

Government. And the personnel of this organization must contain at least one physician. The district health officer for the district is chairman ex-officio of each of the sub-district Boards under his supervision. The sub-district Boards have three services under their district, viz.: Public Health and Sanitation, Medical Inspection of Public Schools, and Vital Statistics. The officials for each of these are appointed by the Sub-district Board, thus eliminating the political factor from all appointments. Several of these appointments before completed must be corroborated by the Chief Medical Officer.

The duties of the Chief Officer of Health comprise Vital Statistics, Sanitary Engineering, Publicity and Education, Food Supervision, Infant and Child Hygiene, and general administration.

The duties of the Chief Medical Officer comprise: Medical Inspection of Schools, Hospitals, Tuberculosis and Venereal Disease control.

A laboratory has been organized and equipped, and for nearly a year it has been possible to undertake practically anything that can be carried out at any of the laboratories in the larger cities. The laboratory work, under the Chief of Laboratories, includes water analysis, tuberculosis, diphtheria, gonorrhoea, milk and foods, typhoid fever, malaria, syphilis, pathology and medico legal work.

A Public Health and Sanitation Service was inaugurated on October 1st, 1918. Medical Inspection of Schools was commenced on August 1st, 1919, and at the present time, in every section of the province where people live, this service is being carried on. Since August 1st there have been vaccinated without extra charge to the province, since this work is done by medical inspectors who are on salary, between thirty and forty thousand school children.

The Vital Statistics Service began January 1st, 1920. There is now a sub-deputy registrar in every parish, town and city in the province. They report to the Registrar-General, who in the organization is the Chief Officer of Health.

It is announced that in a short time a week will be set apart to launch the Venereal Disease campaign, during which time it is expected that every possible factor will be used to bring to the attention of the general public conditions as they exist, as well as governmental plans for coping with these maladies. It is expected the one Sunday of the week in question the Church will co-operate as an auxiliary of the campaign.

Child Welfare work is being undertaken and much assistance is being obtained from the Victoria Order of Nurses. An extra

nurse is being supplied to the Order for their work, and a fraction of the time of all Victorian Order nurses is devoted to Child Welfare work, until such time as it will be possible for the province to embark definitely into this field themselves.

Such in brief is the story of the advances in public health in the Province of New Brunswick during the last two years. Comment on such a striking history of spectacular progress is unnecessary. THE PUBLIC HEALTH JOURNAL congratulates Dr. Roberts on his achievement, and New Brunswick on Dr. Roberts.

THE RED CROSS.

The present issue of the PUBLIC HEALTH JOURNAL is a Red Cross number. International Red Cross—looked upon heretofore as an important auxiliary to the Medical Departments of armies during war has definitely decided to enter on a Peace time programme. This issue is in part devoted to a description of some of the activities in which the Red Cross will lend a helping hand.

It would seem more than logical that the Red Cross should have arrived at its momentous decision. During the never to be forgotten years of the great war the emblem of the Society has spelled mercy and succor to thousands of soldiers and sailors on land and sea. But the tragedies of peace are even greater than those of war and the evolution of preventive measures which will take effect not only for a temporary period, but for all time, is a more noble achievement than the most efficient salvage.

The efforts of the Red Cross will be principally along preventive lines, and in the new field there are tremendous possibilities. Government and municipal departments are doing good work in their official channels. Voluntary organizations, however, must always act as spearheads in the attack on disease, and it would seem that particularly in their sphere the Red Cross should render service. Voluntary organizations there are already at work—but all the Governments and all the voluntary organizations in the world are as yet unable to cope with existing conditions.

Some new organizations are needed; the scope of others should perhaps be more clearly defined; other organizations need help —and undoubtedly in years to come the Red Cross with its extensive and powerful machinery will render invaluable aid in these and other directions. Certainly this new arrival in the public health field is welcome and should give an added stimulus to a movement so fraught with possibilities for human betterment.

To Sir Charles Cameron, Dublin, Ireland

By Frederick L. Hoffmann, LL.D.

I had a glimpse of Ireland;
In a transport of delight,
The memory comes back to me
In the stillness of the night;
When fancy does its mystic work
And things are what they seem;
A semblance of reality
In the wonderland of dreams.

I dined last night in Dublin,
In a house of bygone days;
Mine host was good Sir Charles,
Unspoiled by modern ways.
A proud, but time-stained, hero,
In the fight for better health;
For righteous ways of living,
Disregarding ease and wealth.

By a cheerful open fire,
We sat far into the night;
We discussed on many questions,
In our eagerness for light.
On sanitary progress,
And the fight against the slum—
Of the duty of endurance,
Until our war is won.

Out of the semi-darkness
Came the shadows of the past;
The gentle souls of other days,
Whose visit could not last.
Too frail for earthly sorrows—
Alas! The best die young.
Oh, Lord of Hosts have mercy,
And make us brave and strong!

Then in came the company—
From Belfast to Athlone;
Some ladies fair and beautiful,
Reminding me of home.
A likeness—yet a contrast—
To a time that past recall;
The dead rejoin the living,
Through the paintings on the wall.

I've had a glimpse of Ireland—
Just a fragment of the whole;
Of a people's life and labour,
Of Irish love and soul.
I seem to hear the voices
That want Ireland to be free,
As I look across the waters
Of the storm-tossed Irish sea.

Dublin—Irish Sea—Edinburgh,
September 26th-October 2nd, 1919.

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The Public Health Journal

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Recent Advances in the Science of Ventilation from the Industrial Standpoint

BY GEO. G. NASMITH, C.M.G., PH.D., D.SC., D.P.H.*

THE great national stocktaking which has followed in the wake of the war has emphasized certain facts very strongly. One of the most outstanding is that whereas a few years ago capital was probably the most sacred thing in the world this is no longer so; but, on the contrary, all that directly affects human life and happiness is now, in Anglo-Saxon countries at least, the thing of supreme moment. Most employers of labor as a result of the war and its experiences, whether they wished to or not, have been forced to adopt a new set of working principles in regard to the health and welfare of the workers. As a natural consequence of this new point of view, held formerly only by certain people interested in questions of public health and public welfare we are now hearing and reading much about reconstruction, of labor and capital, of the minimum wage, of shorter working hours, of profit-sharing, and many other things which have to do with the problem of keeping the worker satisfied and giving him a fair share of the comforts to which he is entitled.

With the belief current among business men at the moment that production must be increased to the limit of our capacity there is associated the principle that the worker himself must not be further exploited. With this end in view efficiently experts have been employed not only, or even chiefly, for the purpose of increasing production, but to endeavor to save the worker all unnecessary and useless labor. It is, of course, true, that in most cases where the strength and energy of the worker is improved the quality and quantity of his output will also increase.

* Of Gore, Nasmith & Storrie, Consulting Engineers, Toronto.

Coincident with the changes which are steadily taking place in regard to labor and capital great improvements have come in the conditions of environment under which labor is carried on. Through the efforts of public health officials and sanitarians during the past twenty years, there has been a remarkable advance in factory hygiene and other matters of environment which tend to improve the health and efficiency of the workers. Numberless employers have come to recognize the fact that it pays to engage doctors and nurses to look after their employees, and that it is good business to protect the workers from accident, dust, gases and other agencies which lower their physical efficiency.

In Toronto before the war there were 5 firms which employed welfare nurses to look after their employees. In the year after the war there were in the same city 28 firms employing qualified nurses. At the University of Toronto at the present time there are a number of graduate nurses taking the post-graduate course in social service work with the object of fitting themselves for the field of industrial nursing. The Department of Public Health in the City of Toronto employs about one hundred nurses in welfare work, and these doubtless relieve the smaller industries of much of their responsibility. All of which is evidence that even where the municipality takes the responsibility of looking after the general welfare of the community there is plenty of room for the extension of welfare work in private industry, and, also, is an indication that from the business standpoint such welfare work is worth while.

Even where labor is unskilled it has proved a good investment to improve the working conditions, for then workers, as a result of improved surroundings, will remain longer on the job, and there is a greatly lessened turnover of labor, which, in one striking instance in Ontario amounted to 60 per cent. in three months.

The Effect of Environment on Health.

The human body is an extremely complicated machine whose efficiency depends upon the mutual co-operation of many factors. When all of the body functions are operating in harmony we have the conditions which may be summed up in the term health. The health of the body is shown among other things by its ability to perform work, and to resist disease. The effect of outdoor life, of regular exercise, of regulated hours, of carefully controlled environment and medical supervision was wonderfully well shown in the civilian armies during the war. In the army, men, formerly of sedentary occupations, rapidly became strong in body, perceptibly

broadened out and developed a most marked resistance to disease. Statistics show that there was actually less disease in the British Army in the field than there was among the civilian population at home, in spite of the fact that the soldiers were continually subjected to all sorts of hardships and exposure. One could actually see the improvement taking place in the amateur soldier of a new battalion in the course of a few weeks; his brightened eye, his heightened color and his springy walk, all indicated that his muscular, nervous and vascular system were in fine tonic condition. There is no doubt that fresh air is nature's tonic and common experience proves that fresh air gives us a general feeling of well being.

In civilian life the conditions of environment of the average individual are quite different to those of the soldier. He is protected from sudden changes of temperature and undue exposure; his supply of fresh moving air is limited, his exercise is curtailed, and he loses tone; as a consequence he is unable to react to sudden changes of temperature, his powers of resistance are reduced, and he becomes more subject to attacks of disease. During the war it was clearly shown that in industries where the highest efficiency was desired men and women could not be forced to work overtime without the price being paid in a reduced output of work and in an increased amount of sickness. It was also discovered that a weekly holiday was essential, and that a shorter working day frequently resulted in an increase in the amount of work turned out.

Environment in Industry.

The purpose of industrial physiology is to determine the conditions under which the worker can perform his work most efficiently while maintaining his health, and, furthermore, of establishing in the factory and workshop the conditions which tend to produce the maximum output of work without impairing the maximum power of the worker. Much has been learned about the first of these problems, and, when workers and employers realize that it will be to the advantage of both to organize industrial work on an intelligent basis the second will come about. Research committees in Great Britain and the United States have been carefully studying the relations of the hours of labor and other conditions of employment to the development of fatigue, giving due consideration both to industrial efficiency and to the preservation of the health of the workers.

In 1914 the Department of Health of Toronto entered upon a campaign to improve the sanitary and hygienic conditions in factories. It was then found that in many industries there was little or no protection against poisonous fumes and dusts, but in a very short time hoods, ducts and exhaust fans for the purpose of carrying off these materials and protecting the operators were established in practically every place where such were needed, while existing sanitary conveniences were greatly improved. It was noteworthy that there was little opposition to the demands of the Health Department at the time, but the willingness to co-operate has latterly become even more pronounced. The war has brought about a much more sympathetic attitude on the part of the employer to demands for improving the working conditions of the employees.

In the industrial plants of Toronto, which are much like those in any other large city, there are few modern ventilating systems. In general the system of heating is steam radiation, and the air supply comes through the windows. In large factories window ventilation is very difficult, and not at all satisfactory from the sanitary standpoint; even in smaller plants, though fair results may sometimes be obtained with intelligent management, the method is almost sure to entail drafts with a certain amount of risk to a number of the employees. An ideal system of washed, humidified and tempered air forced into and drawn from the workrooms by fans is not, to the writer's knowledge, to be found in a Toronto factory, though partial systems are to be found in some schools and office buildings.

The Newer Knowledge of Ventilation.

It is generally recognized among sanitarians and hygienists that a small improvement in sanitary or hygienic conditions, which will improve the health and efficiency of all the members of the community by, say, five per cent., is of infinitely greater value than one which will improve only a small percentage of the community by say 25%. In a city, for example, an improvement which makes the water and milk supply safe favorably affects every single member of that municipality and counts more in promoting the general health and efficiency of the whole community than the individual work of hundreds of doctors and nurses in directly curing cases of disease once they have been contracted. In the field of public health an ounce of prevention is worth many pounds of cure.

For this reason any improvement in a system of ventilation will have far-reaching results. Everybody lives, moves and has his being in an atmosphere which he constantly inhales and exhales; which literally surrounds him like a garment; which is the medium that carries germs of disease to him, and which, through its temperature and moisture constantly affects his skin and through the skin all the vital processes of his body.

It is of great theoretical interest to know that some of the most remarkable developments in Hygiene during the past few years have been in the problem of ventilation, and it is of great practical importance to realize that this new knowledge of ventilation can be applied to the great benefit of the community at large.

In 1905 Paul showed very clearly that all the ill-effects of bad air were not due to chemical, but to physical characteristics. He had subjects live in an air-tight cabinet and allowed them to rebreathe the air until they began to show depression, headache, dizziness or even a tendency to nausea. When allowed to breathe fresh outside air through a tube no relief whatever was experienced; neither did the bad air from the inside of the cabinet produce any symptoms in a person outside of the cabinet breathing the air through a tube.

When the air in the cabinet was dried, or cooled, or put in motion by means of a fan all of the symptoms of discomfort and illness immediately disappeared without any chemical alteration being made in the air. The result of stirring up the air in the cabinet, cooling it, or removing the excess moisture by drying simply enabled the human body to throw off its heat more rapidly. In other words, the symptoms arising in vitiated atmospheres are due to heat stagnation in the body, and the moisture of the atmosphere, its temperature and its stillness are responsible for the effects produced.

These findings of Paul have since been shown over and over again by numerous scientists to be correct. In recent years the New York Commission on Ventilation, which experimented upon hundreds of human subjects over a period of years, has further confirmed these findings and thrown a great deal of additional light on the subject. The Commission proved conclusively that the bad effects of poor ventilation are due almost solely to excessive humidity, to increased temperature and to stagnation of the vitiated air.

The New York Commission kept men in air-tight rooms day after day rebreathing air that contained all the accumulated products of the breath. Yet they did as much mental and physical

work, and felt just as happy as when fresh air was constantly supplied to them, as long as the temperature of the air was kept low. Very careful tests were made by skilled scientists to determine whether there were any ill-effects upon the heart, circulation or general efficiency of the body, but none could be detected. The Commission found that the whole secret lay in the fact that the air around the body was stagnant, and that as long as this air was continually removed or its temperature lowered, there were no harmful effects, even though its carbon dioxide content was increased to many times its normal amount, and its oxygen content greatly reduced.

It was found that slight rises in the body temperature may be produced by a higher temperature of the surrounding atmosphere, and that these rises produce marked physiological effects, such as an increase in the heart beat. A considerable rise in the atmospheric temperature may also quicken the respiration. Passing from a hot to a cold room results in an increased secretion of the nasal mucous membrane, and this condition seems to be favorable to invasion of that protective layer by micro-organisms and consequently to infection.

The actual inability to do as much physical work on a very hot day has been proved by confining animals in very hot cages for several hours, and then showing by accurate scientific tests that their muscles were incapable of doing as much work as they had been before being subjected to the heat. It is therefore natural that on a hot, humid day we should reduce our muscular exertions to the minimum in order that we may not have so much heat to get rid of. The power to perform physical or mental work at moderately higher temperatures is not at all impaired, but the inclination to do physical or mental work is diminished—a most important point in industry.

Without going into the actual details of experiments and the results obtained by numerous investigators in the problems of ventilation, it has been found that in general a moderately cool and moderately dry air in motion is the most beneficial to the human body. A temperature of from 65 to 68 degrees Fahrenheit, with a relative humidity of not more than 50% is about the best where great physical labor does not occur. Furthermore, the stimulating effect of fresh air on the human body depends not on its chemical composition, but on its physical characters, namely, low temperature, low humidity and motion.

THE VALUE OF IMPROVED SYSTEMS OF VENTILATION IN INDUSTRY.

In workshops it has been found that a change of temperature of a few degrees is stimulating to the worker, and tends to increase the output; whereas a constant temperature is depressing to the individual.

From the standpoint of the employer and employee these facts are of the greatest value. Proper changes in the systems of ventilation in many industries based upon the newer knowledge will bring about beneficial results in the health and efficiency of the workers, and in their output of work. The ideal system of ventilation should accomplish several things. It should first of all maintain the air at a proper temperature and humidity; it should keep the air in gentle motion; it should remove odours, bacteria, dust and other contaminating substances, such as gases, and should provide a sufficient quantity of fresh air to remove all products of respiration.

There can be no sound hygienic objection to the warmed air of a building being recirculated provided always that it is partly diluted with outside air and washed free from bacteria, dust and odours by passing through water screens. This washing acts exactly as a rain shower in nature, thoroughly cleansing the air of all impurities.

Such air may be cooled, warmed and humidified at the same time to the exact degree desired. As an example of the saving effected it is said that in the gymnasium of the International Y. M. C. A. at Springfield, where this process is in operation, a saving of over 40% of coal from recirculating the air is effected.

The intelligent use of windows in flushing out the building during the rest periods, which are becoming common in modern factories, have a beneficial and stimulating effect on the employees and many other modifications will probably develop as the skilled ventilating engineer, watching results, develops his plan of operating the system. Any scheme of ventilation, whether artificial or natural, will fail if it is not operated intelligently, and the intelligence in this case presupposes a knowledge of the ends to be attained, and the reasons therefore. When it is realized that in one experiment as much as 15% less work was done at 75 degrees Fahr. than at 68 degrees Fahr., the value of careful and intelligent control of ventilation may well be appreciated. Overheated rooms are not only uncomfortable, but produce well marked effects upon the heat regulating and circulating systems of the body, and materially reduce the inclination of occupants to do physical work.

There can be no question as to the value of these modern developments in ventilation in improving the health and stimulating the energy of the worker. With a general improvement in the physical well-being of the individual there is little doubt that his daily output of work will be increased. In overheated, stuffy rooms the worker will unconsciously do less work; from the physiological standpoint it is perfectly natural that he should.

Some of the workshops and factories in this country are a disgrace to the owners and to the community. Public health officials and factory inspectors have done a great deal to gradually force unwilling employers to instal the minimum sanitary requirements demanded in the interests of public health and safety. But beyond these minimum requirements many employers have no intention of going; they will not realize that a dollar invested in improved hygienic conditions for their employees will be almost sure to yield a return many times as great, both in the quality and quantity of the work turned out, in reduced sickness and in lessened liability to accident.

From what has been said above it must not be inferred that fresh air is of no use, that the practise of underheating or suddenly chilling hot workrooms is to be recommended, or that recirculating unwashed air is a thing to be desired; this discussion has no such object, and the writer would be the first to condemn such practises. From the standpoint of the individual and the public health everyone should get as much fresh air as possible.

Our viewpoint of what constitutes fresh air, however, has changed materially, and our practise will naturally change also. The important thing to appreciate is, first, that fresh air is valuable because it is cool or is in motion; and, second, that fresh air is not valuable because it has a slightly larger amount of oxygen or a slightly lessened amount of carbon dioxide than indoor air. These are physiological facts which have been proved beyond all question of doubt. On the other hand, one must appreciate the psychological effect of so-called bad air on people coming into it from fresh air.

The humidity is an extremely important factor. It is a matter of common experience that we feel disinclined to work on moist, hot sticky days when the humidity of the air is high. There is a definite physiological reason for this. The temperature of our bodies is controlled through the amount of heat lost through the skin by the regulated evaporation of visible or invisible perspiration. At a high temperature as the humidity of the air surrounding the body increases the moisture constantly given off from the surface

of the skin is less easily evaporated, and, therefore, less heat is lost from the body. If the temperature of the air is high when the humidity is high we experience great discomfort because our bodies are unable to get rid of their superfluous heat by these methods. On the other hand, the air may be saturated with moisture, as it often is over the sea or in insular climates, and yet be very invigorating because it is cool and carries away through conduction any surplus heat that the body needs to be rid of.

On humid days the humidity in places where large numbers of workers are congregated increases, and the normal conditions of discomfort, due to excessive humidity, become aggravated. On the other hand, a temperature over the desert may be even as high as 115 to 120 degrees Fahrenheit and yet be quite bearable because the relative humidity is so low that the dry air rapidly carries away the moisture from the surface of the skin, and thereby reduces the temperature of the body. Very dry air, such as we get in practically all of our buildings during a Canadian winter, is also very objectionable, drying up the mucous membrane of the eyes, nose and throat and creating a most uncomfortable feeling, which is very obnoxious to people accustomed to a moister climate.

High temperature, combined with high humidity, produces not only discomfort, but definite symptoms of physiological derangement, such as a rise in body temperature and pulse rate, and a fall in blood pressure, doubtless due to manifestations of the body's effort to reach a state of heat equilibrium with the outside environment.

With an understanding of the principles here outlined it may be seen that it will be quite possible and feasible from the economic standpoint to materially modify our systems of ventilation with great benefit to the health and energy of the worker and the output of the plant. From the commercial standpoint it would probably pay well to instal in almost every new factory the most modern ventilating system and employ an up-to-date engineer at the single task of watching the ventilation with the efficiency of the worker in mind; the output of the factory would take care of itself. Such an engineer as the writer foresees him will carefully control the temperature, the humidity and the movement of the air.

SUMMARY.

Accurate and elaborate physiological studies on hundreds of human beings have shown that air temperature and air humidity have profound effects on the human organisms. When air condi-

tions are unfavorable the health and efficiency of the subject is likely to be seriously impaired. But since we now possess accurate knowledge of how temperature and humidity affects the human body, and particularly since there are practical mechanical methods of controlling and modifying these factors at will, there is no reason why we cannot live indoors under atmospheric conditions which at least approximate the ideal.

Taking these facts into consideration, it would appear to be an excellent investment to provide only air that has been so tempered and conditioned that will improve the health and increase the efficiency of the employee, whether in office, warehouse or factory.

Sanitation*

W. H. HATTIE, M.D.,
Chief Officer of Health for the Province of Nova Scotia.

THE three things which we especially regard in man—his physical, mental and moral attributes—are mysteriously but indubitably associated and co-related. Sociological studies made in many countries show that a very large percentage of those who offend against the laws are below the normal average either physically and mentally, or both physically and mentally. Moreover, mental health is largely dependent on health of body. The struggle for existence can best be endured by those who are fittest, while those of limited endowment may be practically compelled to resort to questionable means of acquiring the necessities of life. It is, therefore, not without reason that in such conferences as this a place is given to the consideration of conditions which affect health, for it may be logically claimed that the prime essential to social betterment is the establishment of conditions which favor the development of an alert, vigorous, resourceful people—capable of competing successfully and yet honourably against all comers.

I have been asked to deal with the subject of "Sanit'ation," and in order to be sure of my ground I have gone to the dictionary for a definition of the topic which has been assigned to me. There I learn that Sanitation is "the practical application of knowledge and science to the preservation of health." Upon such a text a very long dissertation might be given. So much of our knowledge is dependent upon science that it is not easy to dissociate knowledge and science in our consideration of the definition. Nevertheless, much of our most practical work, perhaps in all line of endeavour, was first undertaken on the basis of purely empiric knowledge. As a single example of this in the field of sanitation it may be said that the filtration of water was practiced for more than half a century before we had a scientific explanation of its usefulness. And it has been known for ages that health depends essentially on the things taken into the body and the things cast off from the body. When to these we add clothing and shelter we have really compassed all the factors which most

*Read before the Social Welfare Congress, Halifax, March 11, 1920.

intimately concern health, and both clothing and shelter have to be considered in relation to body intake and body output. Air, light, water and food we must have in sufficient quantity and of proper quality. Shelter plays an important part in determining both the quantity and quality of the air and light we receive, as well as the quality of our water and food. Clothing and shelter both influence and are influenced by the materials which the body casts off. These factors, and their interdependence, were known if not fully appreciated, long before science afforded any explanation of the part they play in the maintenance of health. But science has added incalculably to the precision of our knowledge, is daily enabling us to interpret previously inscrutable phenomena, and holds out to us the brightest hope of ultimate solution of problems of momentous import to our physical and therefore to our mental and moral welfare.

It has been the application of the revelations of science which has made possible the wonderful progress which has been effected of late years in the public health field. The discovery of the specific germs of many of the communicable diseases, and the knowledge which has come to us of the habits and limitations of these germs, have not only indicated to us rational methods of preventing the spread of such diseases, but have stimulated interest in the control of other diseases which, though not communicable, are nevertheless preventable. And so modern sanitation is concerned with a great deal more than the endeavour to check the spread of infection, and embraces every activity which promises to make man healthier and more vigorous, and to enable him to both put the most into and get the most out of life.

Preventable sickness and preventable death extort from us a frightful toll in suffering, sorrow, inefficiency and want, and accounts for no small share of the degeneracy, dependency, vice and crime which are so greatly to the discredit of our social structure. They also involve us in an economic loss which can only be estimated roughly, but which is undoubtedly enormous—certainly running well into millions of dollars annually for our province alone.

Wherever public health work has been undertaken seriously, methodically and energetically, there has been a prompt and sustained reduction in the death rate, and consequently in the sickness rate. Up until the preent we have been playing with the health of our people in Nova Scotia. Now we are making a beginning at better things. A policy has been adopted which should have the effect of lowering a death rate which has been consistently far too

high, but its success depends upon the co-operation of all our governing bodies—provincial, municipal, city and town. It is most regrettable that several of the councils have not shown a disposition to co-operate. Apparently they have failed to realize the importance of conserving our most precious asset—the lives of our people. The reason is all too apparent. There is not sufficient demand for proper prosecution of public health activities. Governing bodies are composed of human beings, and it is very human to give first consideration to the demands which are most vigorously pressed. Obviously, if we are to have better health our people must be educated in the need for it, so that they will be ready not only to give support to every measure which aims at public health betterment, but to make it evident that our various governing bodies are expected to institute such measures.

It seems to me that it is a legitimate function of such an organization as a Social Service Council to take a full share in such educational work. There has been a good deal of discussion of late as to how public health work shauld be divided between the state and private enterprise. Educational work of this type might well be undertaken by private enterprise, and perhaps our definition of sanitation may suggest partition in other particulars. "Sanitation is the practical application of knowledge and science to the preservation of health." Would it not seem that to the State should be assigned the practical application of the knowledge we already have, while to private enterprise there should be assigned at least the greater share in the scientific investigation which must be carried on in order that we may be guided aright in work already being undertaken and shown the way for other activities? There is nothing novel in the suggestion. It is merely set forward for consideration at a time when constructive co-operation is an imperative necessity, and when any dissipation of energy through needless overlapping of activities would be little short of criminal waste.

Of the need for more effective sanitary work, our statistics cry loudly. They show that our people need in varying degree either more *and* better or more *or* better air, light, water and food. They show that greater care must be given to the things cast off from the body—the excreta which may pollute air, water, food and clothing, and the germs of communicable disease. They show that we continue to sacrifice many lives yearly through our ignorance, indifference and greed, and that of those who escape death a distressingly large proportion are so handicapped that they cannot make

the fullest use of and attain the fullest enjoyment of life. And when we compare our statistics with those of many other countries we find that we are being placed under a mighty handicap, for these countries are reducing their death rates, reducing their sickness rates, and thereby increasing the physical and mental vigour and incidentally the moral stamnia of their people. Is this not a matter which should cause us concern? Should we be indifferent to the fact that our general death rate remains high while that of countries with which we must compete is being steadily lowered? Is it of no importance to us that despite a fairly satisfactory birth rate our infant mortality rate for the Province is considerably greater than that of the great cities, London and New York, and more than double that of New Zealand? Many of the factors accounting for these differences are within our control. Perhaps the most pressing problem in our towns is the housing problem, which cannot be solved promptly, but we can at least provide at once for cleanliness, light and ventilation in practically any house in the province. We can see that our babies get good milk; that our expectant mothers get necessary attention and assistance; that infectious conditions are kept under control; and that the remediable defects which are so common in our school children are corrected. We can make school buildings (and public buildings generally) sanitary. We can do much more than we have done for tuberculous patients, and limit the opportunities which this disease has for spreading. We can keep streets and yards clean, and eliminate much of the danger which associates with the distribution of dust and offensive effluvia. We can guard against the dangers which associate with unwholesome foods and beverages. In such ways we can do a great deal towards attaining the goal we seek—the elimination of unnecessary sickness and suffering, the prevention of unnecessary death, and the upbuilding of the physical strength of our people. Thus will we go far not only towards assuring our people the comfortable enjoyment of life and preparing them for success in the competition with other peoples—every day growing keener, but also towards giving them that degree of physical strength which unquestionably is of great importance in determining mental acumen and moral sturdiness.

"Public Health Information Bearing Upon Pre-Natal Subjects"

By Robt. E. Wodehouse, O.B.E.
Ontario Provincial District Medical Officer of Health; Lieutenant-Colonel C. A. M. C., District No. 2, Toronto.

DURING the month of February, 1920, a tour was made through the Provincial Health District No. 7, with the Ontario Board of Health exhibit, and studies were made of the Vital Statistics, as well as survey made of the municipalities, house to house visits being made to mothers of babies in arms, and clinics were conducted for parents to consult regarding their children. Much interesting data was secured, and is presented here. The tour completed, the writer decided to obtain further information along certain lines, from other communities not visited. The tour included Blind River, Thessalon, Sault Ste. Marie, Kenora, Keewatin and Fort Francis. Further figures were obtained from Fort William, Galt and Guelph. The records of the house-to-house visits and clinics contributed the following information: 158 mothers gave facts covering 734 pregnacies, including 4 miscarriages; 572 babies were breast fed; 72 babies artificially fed, and 30 babies had breast milk and an auxiliary food.

The number of deaths from intestinal causes, under one year of age, was 23. There were 3 still births and one death under 4 hours. The mothers resided in Blind River, Thessalon, Sault Ste. Marie, Kenora and Keewatin. There has not been any attempt at child welfare work in these communities, either by the Local Board of Health or by volunteer organizations. Their infantile death rate, with the exception of the Soo, are surprisingly good, as will be seen by reference to the tables following:

The clinics were very poorly attended, but those who visited them came from homes having the maximum of comfort and enlightenment as well as social status in the community, and along with these mothers came those of every degree of prosperity in the municipalities. All were keenly interested and grateful. The medical men expressed the opinion that there would be less embarrassment to the mothers visiting the clinic, and much less to the different local physicians taking their turn at the clinic if a total stranger were to preside. In the smaller communities, all the doctors know all the people. It is easier for a stranger to advise with this physician and that one than for the local man. It was quite

evident that clinics concerned with child welfare work should not be considered as healing centers, and only as centers to advise and bring mothers in contact with their physicians for supervision and care in matters they were at the moment not aware warranted such. It was evident that clinics should be open to all classes regardless of their financial standing, and none should be debarred. All wish to be educated and should be granted the privilege.

The exhibit did not attract the numbers of adults that one would have hoped for. The writer is fully convinced that the parents of infants or expectant mothers are very grateful for house visitations by child welfare workers, and believes this the most remunerative channel for advancing the cause, as personal touch is essential and gets results at once, which propaganda and exhibits alone will not accomplish for an indefinite number of years. Each mother visited and instructed is ever afterwards an active missionary and advocate of child welfare undertakings. A community of from 2,000 to 5,000 population can be handled in six to eight days, if all organization of lists, etc., is completed beforehand. Twenty to thirty visits can be made a day if there is no loss of time finding addresses. The plan was to visit the mothers of every baby registered as born during the previous twelve months.

(The writer wishes to acknowledge with thanks the excellent results obtained in this work, due to the untiring efforts of child welfare Nurse Knox, of the Ontario Board of Health Bureau.)

The records of all the communities disclosed the following data, gleaned in each case by the writer, and therefore subject to uniformity of error:

THREE COMPARATIVE SCALES

TOWNS AND WARDS

	Fort Francis	Kenora	Guelph	Galt	Fort William Wards One	Two	Three	Four	Sault Ste. Marie
Still Birth— Rate per Pregnancy Registered	1 in 92	77	28	18.3	17.8	21.9	43	17.6	23.6
Deaths under Seven Days	1 in 23	21.8	48.1	55.	66.75	51	43	28.2	33.3
Combined S.B. & Seven Day Deaths	1 in 18.4	17	17.73	13.75	14.05	15.3	21.5	10.84	13.8

Total pregnancies tabulated, 2,028.

The impressions received from the preparation of these tables are:

1. Population of British ancestry give birth rates in Ontario municipalities between 2,100 and 2,300 per 100,000 population. This increases in proportion to the extent to which non-British ancestry residents percolate into a settlement, reaching as high as 3,700 per 100,000 population, where non-British ancestry predominates.

2. The infant mortality is decidedly influenced by the above-mentioned factors, but it also shows ups and downs influenced by causes not detected. Ward 3, Fort William, containing the best off, financially, in the city, and a portion of the city best organized, in so far as city ufilities are concerned, has been influenced markedly by the child welfare work of its Department of Public Health, showing a rate of 46.51 per 1,000 births. In the same city, the two wards having a predominance of population of non-British ancestry show rates of 134.75 and 168.53, the latter ward being most unhygienic in its location and actual conditions, and having a very large non-English-speaking mother population.

3. The centers where infant child welfare work has not been undertaken show remarkable states. Sault Ste. Marie shows one ward with a death rate of 61.5. This undoubtedly is influenced by the high non-resident birth rate attributed to the General Hospital, which is situated in this ward. Otherwise, the Soo shows rates in three wards in access of 150 per 1,000 births, and in two of these the rates are over 200 in 1,000 births. These three wards accounted for 72 babies dying under one year of age out of 372 babies born, 54 deaths being from pulmonary and intestinal causes, probably preventable, at least coming under the category most easily influenced by the slightest child welfare endeavor. (The Mayor, Board of Health and Rotary Club all promised to see that there was a local effort put forward before the warm weather of 1920.)

Four other centers have remarkable low rates considering their location, type of population and lack of effort on the part of the community to influence the rate. Fort Francis and Kenora have high birth rates, mixed populations and death rates of 108 and 84 respectively per 1,000 births. Both have questionable public water supplies, both being chlorinated. Galt and Guelph show 76.3 and 89.02 per 1,000 births. Guelph's birth rate is the lowest encountered in any town or ward in a city studied.

4. Under the groups influenced by pre-natal care, startling figures were disclosed: One still birth was noted for every 92 pregnancies registered in Fort Francis; 77 in Kenora; 28 in Guelph; 18.3 in Galt, and in Fort William, Wards 1, 2, 3, 4, respectively, there were 1 in 17.8; 21.8; 43, and 17.6, respectively.

Municipality	Ancestry of Citizens	Births 1919	Births per 100.000 Pop.	Deaths under 1 year of age	Deaths per 1,000 born	Still births	Deaths under 7 days old	Deaths from intestinal causes	Deaths from pulmonary causes	Assessors population 1919
Ward—										
Sault Ste. Marie I	British	65	3250	4	61.5			2 or 50%	0	2033
Sault Ste. Marie II	"	47	2099.1	5	106.4			3 or 60%	1 or 20%	2239
Sault Ste. Marie III	"	83	2206	10	120.48			5 or 50%	3 or 30%	3767
Sault Ste. Marie IV	Cosmopolitan	168	2734.8	35	208.3	24	17	22 or 62.8%	8 or 22.8	6143
Sault Ste. Marie V	"	114	3275.8	19	167.5			7 or 38%	4 or 21%	3480
Sault Ste. Marie VI	"	90	3241.2	18	200.			8 or 44%	5 or 27%	2777
Fort William I	$\frac{3}{5}$ non-British Cosmopolitan	267	3454	45	168.53	15	4	13 or 28.8%	4 or 8.8%	7730
Fort William II	British	153	2523	16	104.57	7	3	4 or 8.8%	1 or 2.2%	6064
Fort William III	"	43	2226	2	46.51	1	1	1 or 2.2%	0	1931
Fort William IV	$\frac{1}{5}$ non-British Cosmopolitan	141	3388	19	134.75	8	5	6 or 13.3%	3 or 6.6%	4161
Fort Frances	$\frac{3}{5}$ British Cosmopolitan	92	3680	10	108.6	1	4	4 or 40%	1 or 10%	2512
Kenora	"	153	3060	13	84.	2	7	4 or 50%	1 or 12½%	5031
Galt	British	275	2211.6	21	76.3	15	5	2 or 9.52%	2 or 9.52%	12434
Guelph	"	337	1978.6	30	89.02	12	7	11 or 36.6%	5 or 16.6%	17032

One death under seven days occurred in the same ommunities in every 23 pregnancies in Ft. Francis; 21.8, Kenora; 48.1, Guelph; 55, Galt, and Fort William, Wards 1, 2, 3, 4, respectively, 66.75; 51; 43, and 28.2

Still births, combined with deaths under seven days, show an incidence in the same communities as follows: 1 in 18.4 registered pregnancies in Fort Francis, 17 in Kenora, 17.73 in Guelph, 13.75 in Galt, and Fort William, Wards 1, 2, 3, 4, respectively, 14.05; 15.3; 21.5; 10.84.

The factors influencing this phase of the study are not all evident. Municipal and personal sanitation are thought not to be factors. The educational status of the individuals, in the home, does not seem to constantly influence in one direction. The prevalent practice of mid wifery (so-called), shows an influence in the rate of still births, but not in the deaths under 7 days, or the combined rate.

The best showing of any area studied is made by Ward 3 of Fort William, where the greatest amount of child welfare accomplishment is evident, probably due to the keen motherhood employing the most alert, attentive physician, without consideration of expense, from inception to the completion of Puerpurium, and insisting upon and receiving continuous supervision during the entire pre-natal period. There seems to be a relation between the rate of still births and the profession, but it is not the only constant feature. For instance, one community having still births registered by eight different physicians, had practically 50% registered by one physician. In another community studied, one physician registered 58.3% of the still births for 1919, and actually attended 14.8% of the mothers registering babies as born for the same period in the municipality.

It must be evident that something is urgently needed to be done forthwith to place our fingers upon the remedial causative factors in this pre-natal field.

New Brunswick is going "over the top" in the Membership drive.

Industrial Hygiene: Need of Research in Canada

Prepared under the direction of the Committee on Industrial Fatigue of the Honorary Advisory Committee on Scientific and Industrial Research.

THE science of industrial hygiene is a young science since, while from the early days of industry humanitarians have endeavoured to reduce the more flagrant hardships of the worker, it is only within recent days that general recognition has been given to the importance of physiology in relation to the problems of industrial life. It is probably true, as a broad generalization, that the ever-increasing volume of welfare work on this continent and in England arose out of general social and humane principles and, with possible rare exceptions, owed little for direction to scientific and economic evidence. Even the enlightened employer followed his own ideas of what should be done for his employees without appreciation of the problem as a scientific one calling for investigation and research into the actual facts of the case—into the true relationship existing between the working conditions and the actual output of the workers.

Recognition of the fact that in the science of physiology should be sought definite criteria for the ideals of working conditions was astonishingly late in coming. Thus, in 1912, Josephine Goldmark, in her book *Fatigue and Efficiency*, sought to present facts collated from the modern scientific study of fatigue as a *new* basis for legistion, appealing direct to physiological, chemical and psychological science "for aid in the practical problem of reducing the long working day in industry." Similarly, the final report of the British Health of Munitions Workers' Committee emphasises the absence up to 1914 of any scientific method in dealing with problems of industrial hygiene. The committee found that "efforts to protect the health of industrial workers had been based on the need of mitigating or removing evils as they arose, rather than on the actual result of scientific enquiry and research." They pointed out that while increasing attention had in recent years been devoted to the critical examination of certain "dangerous" trades, they found themselves with totally insufficient data on the effect of the ordinary "non-dangerous" trades on both men and women. Again they stated that "the proper length and distribution of hours of labour—spells, pauses, overtime—in relation to output is another problem which has never been scientifically explored. . . . Once

more, though attention is now being given to so-called 'scientific management' evidence is still wanting to show how far the speed of working can be increased or the method modified without involving an undue physical and mental strain on the worker, which counterbalances or even destroys the advantages claimed." In conclusion, the Committee urged the "imperative need of a more accurate understanding and a firmer and more comprehensive grasp of the whole problem of health and physique in relation to industry."

Equally tardy and obscured in the same way by the lack of scientific data has been the realization of the fact that health and efficiency go hand in hand. In the epigram on which the British Committee base their conclusions "without health there is no energy and without energy there is no output." It is not too much to say that on application of this great maxim the prosperity of modern industry will largely depend. Sporadic recognition of the principles there has, of course, been, and many employers must have discovered that reforms of working conditions in their plants undertaken in the general interests of the welfare of their employees have not merely been so much unremunerative outlay, but have proved good, economic investments leading to greater efficiency and greater production. Thus, as early as 1894, Sir William Mather, reviewing the actual result on output of an experiment in reduced hours of work wrote, "We seem to have been working in harmony with a natural law, instead of against it, as in the unnatural conditions of men beginning the work of the day without provision required by nature for the proper exercise of their mental faculties and physical powers. . . . *Of this I am assured, that the most economical production is obtained by employing men only so long as they are at their best—when this stage is passed there is no true economy in their continued work.*" That recognition was not general however is witnessed by the experience of the war, the early days of which saw frantic efforts to get greater output by increasing the hours of work. That the method proved ill-advised is seen by the steady movement during the course of the war towards reduction of hours and restriction of overtime, Sunday and night work. Thus the Committee referred to above reported "there can be little doubt that there is an increasing recognition on the part of both employers and workers of the broad fact . . . that substantial reduction of hours can be effected without any reduction of output. Whereas, at the beginning of the war there was a general belief that longer hours necessarily produced larger output, it has

now become widely recognized that a 13 or 14 hour day for men and a 12 hour day for women, excepting for quite brief periods, are not profitable from any point of view."

During the war the two correlative sides of the problem of industrial hygiene, the economic and the sociological, were presented simultaneously with peculiar poignancy. The need for output on a scale not hitherto conceived of coincided with the need no less urgent of conserving man power. Thus the central problem of industrial hygiene—efficiency and health—was presented to each of the combatant nations as a problem in urgent need of solution. The problem as it appeared to the United States, together with the suggested lines of the solution, are specifically stated in a report drawn up in May 1918 by the Advisory Committee on Industrial Medicine and Surgery, a sub-section of the Medical Section of the Council of National Defense. Both may suitably be summarized here since, while devised as has been seen as a war measure, they apply in principle with equal force to peace conditions, and serve to show in broad outline the scope of industrial hygiene.

The Problem:

(1) To meet the military need of greatly increased production.
(2) To offset the drain on man power in industry brought about by raising the military forces.
(3) To ensure adequate medical service for the civil population.

To meet the problem the Government must

(1) Provide against unnecessary human waste in industry and society during the war.
(2) Increase output by maintaining workers in good health.
(3) Avoid preventable deaths and disabilities from accident and disease.
(4) Restore to full producing power in the shortest possible time sick and injured workers.
(5) Provide healthful places in which to work.
(6) Provide healthful homes and communities in which to live.

Now, although the emergency of the war is over, the principles set out above are no less important in the reconstruction period, and are essential for each country unless it is to fall behind in the economic competition of nations. That England has emerged from the war with a full recognition of the issues at stake is witnessed by the fact that the year 1919, saw the establishment both of a Min-

istry of Health and of an Industrial Fatigue Research Board with the following reference: "To consider and investigate the relations of the hours of labour and other conditions of employment, including methods of work, to the production of fatigue, having regard both to industrial efficiency and to the preservation of health among the workers."

Similarly, in U. S. A., the subject of industrial hygiene is rapidly increasing in importance. The valuable research work of the United States Public Health Service, and the United States Department of Labour, is continuing, and at the present time the latter is organizing a special Industrial Hygiene Division under the recently established Working Conditions Service. Meanwhile, associations of industrial physicians formed during the war are continuing to meet, courses in industrial hygiene are being introduced at some of the universities, and are under contemplation at others and literature on the subject is steadily increasing, and is gaining in publicity. An important contribution will doubtless be afforded by the official report of the Rockefeller Foundation on the results of the conference on industrial hygiene called by them last November "with the object of ascertaining if there was unanimity of opinion upon how industrial hygiene should be organized as regards instruction propaganda, research and practical application."

The question of the advisability of similar work being undertaken in Canada was raised by the Honorary Advisory Council for Scientific and Industrial Research early in 1919. After consultation with professors of physiology in the various Canadian universities, and with the Council of the Canadian Medical Association the Honorary Advisory Council instituted in the spring of the same year the Committee on Industrial Fatigue. The Committee is constituted as follows: Professor J. J. Macleod, Department of Physiology, Toronto University (Chairman); Professor Asselin, Department of Physiology, Laval University, Montreal; Professor C. Dagreau, Department of Physiology, Laval University, Quebec; Professor D. Fraser Harris, Department of Physiology, Dalhousie University, Halifax; Mrs. George Hambleton, Ottawa, representing women's organizations and social work; John Lowe, Esq., The Montreal Cottons, Ltd., Valleyfield, P.Q.; Dr. A. B. Macallum, Administrative Chairman, Honorary Advisory Council for Scientific and Industrial Research, Ottawa; J. A. McClelland, Esq., representing the Department of Labour, Ottawa; Professor Swale Vincent, Department of Physiology, University of Manitoba, Winnipeg; Professor J. Tait, Department of Physiology, McGill Uni-

versity, Montreal; Professor W. Tait, Department of Psychology, McGill University, Montreal.*

It appeared to the Committee from the offset impracticable at the present time to conduct in Canada the extensive investigations into problems of industrial fatigue which are being carried out in England and the United States, both more effectively and more economically, than would be possible here. The Committee would, it was accordingly felt, serve its most useful purpose by establishing liaison with similar bodies in other countries, keeping in touch with their work, and in turn bringing the results of their scientific investigations and researchs into the access of Canadian industry. With this object the Committee proposes to establish offices in the chief industrial centres; one has already been set up in the Medical Building of Toronto University, and a small reference library on industrial hygiene is being collected there. The publications of the English and American Departments and Associations will be kept on file, certain of the more useful periodicals will be taken, others where articles on industrial hygiene appear from time to time will be examined for material pertinent to the subject and bibliographies on the various phases will be prepared. It is hoped that in this way the service will be of direct use to industry as a general intelligence bureau where manufacturers interested in promoting the efficiency and welfare of their employees or confronted with some specific health problem of their own individual industry may obtain accurate and detailed information, both as to the general growth of scientific knowledge on the subject, and as to the most up-to-date methods and solutions approved by the actual experience and scientific investigation of other countries. At the same time certain practical surveys in selected fields will be undertaken by the Committee from time to time, and in cases where definite investigation or scientific experiment seems desirable and feasible the Committee are prepared to assist in such research. In this respect they would at all times welcome suggestions from manufacturers as to problems which might suitably be explored.

A further duty of the Committee will be consideration of the educational requirements for teaching the principles of industrial hygiene and for training technical experts and field workers. In this connection a sub-committee has been formed to consider the facilities at present available in Canada, and recommend what additions should be made.

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*The Committee originally included Professor A. P. Knight, Department of Physiology, Queen's University, Kingston, who has since resigned.

A Plan for a More Effective Federal and State Health Administration

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(*Continued from the April issue*).

As a practical illustration, reference requires only to be made to the work of the China Medical Board of the International Health Board of the Rockefeller Foundation and the considerable expansion of American medical missionary services throughout China during recent years.*

Hospitals and Institutions

The statistics of hospitals and institutions are most urgently in need of being standardized. There is such a large variety of blanks and forms, and such an unfortunate blind conformity to antiquated methods no longer applicable to modern requirements, that drastic reforms are called for. Institutional morbidity statistics are of a high order of intrinsic value and practically useful in connection with a variety of medical, social and economic problems. The work of this section should be intelligently coordinated to the corresponding efforts of the College of Surgeons, the American Public Health Association, the American Hospital Association, etc.

The results of a conference on hospital standardization have been issued in the form of a bulletin of the American College of Surgeons (Chicago), 1917. These were followed by a bulletin dated March, 1918, on Standards of Efficiency, in connection with which it is pointed out that "Ultimate results of hospital standardization are a matter of evolution, of good will, of honesty and fearlessness in facing facts, of team work and of patience". Conceding that widely varying conditions make hard and fast standards quite impossible, it is said, however, that "Remembering these things, there is nothing insurmountable in the task". The minimum standards include a recommendation regarding

*Among the more important publications on the health problems of China and the Chinese are the medical reports of the China Maritime Customs Service and the *China Medical Journal* of the China Medical Missionaries Association. The most useful source of information on the medical problems of China is the treatise on the "Diseases of China", by Jeffries and Maxwell, London, 1910. The most convenient summary of existing health conditions is the report on Medicine in China by the China Medical Mission of the Rockefeller Foundation, New York, 1914.

case records, summarized in the statement that "The hospital keep in a systematic manner case records of its patients, together with a convenient summary of each case, and that it utilize these records in analyses of its medical and surgical efficiency". Most of the hospital reports issued at the present time, at least as regards the statistical data, are practically useless for scientific purposes. Efforts at standardization through special committees of the American Public Health Association and of the American Hospital Association have led to no material improvements in a deplorable situation. The essential function of a hospital is, of course, the treatment and care of patients, and prior consideration must be given to matters of equipment, medical staff, business management, and even financial accounting, but there is no justification for the general disregard of the requirement that the hospital experience data should be made available for scientific and general practical purposes. In such an otherwise admirable work as "The Modern Hospital", by Dr. John Allen Hornsby, the subject of proper morbidity record-keeping and the urgency of uniformity and standardization are entirely omitted. Among the efforts to bring about an improvement, the most promising is the work of Dr. E. A. Codman (*Boston Medical and Surgical Journal*, August 30th, 1917), subsequently enlarged upon in an exceptionally useful study of hospital efficiency, as demonstrated by the case reports of the first five years of a private hospital. Of much value also is a monograph on the care of hospital records, according to the methods of the Massachusetts General Hospital, by Grace Whitney Meyers, a second edition of which was issued in 1915.

In recognition of the need for morbidity statistics of general hospitals and other institutions for the care of the sick, the U.S. Public Health Service in 1917 published a brief report by Mr. Edwin W. Kopf, in which the need for a Federal voluntary registration area for hospital morbidity statistics is emphasized and sustained by observations derived from a reasonably thorough analysis of available information. Mr. Kopf observes that "The registration and statistical analysis of hospital morbidity data in a Federal voluntary area can be accomplished if a sufficient number of representative general and special hospitals will agree (*a*) to adopt in common a nomenclature and classification of diseases and conditions; and (*b*) if they will transmit to a central Federal agency detailed tabulations of their sickness experience upon a set of uniform reporting schedules". Mr. Kopf also points out that "hospitals will be more ready to agree to enter a voluntary registration area if such action will not seriously disturb present record routine or run up clerical costs". The experience which was had by the Committee on Uniform Hospital Statistics of the American Public Health Association, however, proved conclusively that the problem is practically hopeless without

active Federal co-operation. Even so apparently simple a question as the adoption of a more satisfactory uniform disease nomenclature was brought nearer to a final solution only after a conference participated in by Federal departments having to do with medical and related matters, and civilian agencies, including life insurance companies, all of which unanimously agreed to have such a new and thoroughly standardized nomenclature of diseases prepared by the Division of Vital Statistics of the U.S. Census.

It needs, therefore, no further arguments to sustain the point of view that the whole subject of hospitals and institutions demands a broader interest on the part of the Federal Government through the U.S. Public Health Service. The experience gained by the investigations, for illustration, of the committee appointed to inquire into departments of health, charities, and Bellevue and allied hospitals in the City of New York, 1913, as well as through inquiries into the more specialized aspects of the problem, such as standardization of social work in hospitals, a preliminary discussion of which has been contributed by Miss Ida M. Cannon, R.N., N.Y., 1918, the problem of the small-community hospital, than the solving of which there is perhaps no more pressing need to-day in the furtherance of rural health and hygiene, and, finally, the county hospital, which was made the subject of a special discussion by the Commonwealth Club of San Francisco, with particular reference to the needs of California, emphasizes the necessity for an active and sustained interest on the part of the Federal Government, to be realized only through a thoroughly coordinated Federal and State health administration.

Public Health and Home Nursing

There is an urgent demand throughout the country for a more effective organization of public health and home nurses on the basis of existing organizations, chiefly the National Organization for Public Health Nursing and the Home Service Section of the American Red Cross. As observed in a discussion on The Public Health Nurse in its relation to the work of the Children's Bureau, "The first step in the organization of adequate public health nursing service is to form a strong local committee, representing the local health department, the medical profession, the women's clubs, etc." In other words, public health and home nursing, whether on a paid or a voluntary basis, must be, as far as practicable, coordinated to the varying needs of the local health administration. The urgency of a more intelligent co-operation became especially apparent during the epidemic of infantile paralysis in 1917 and the influenza-pneumonia epidemic of 1918. In consequence of the war activities of the American Red Cross a large number of

women have been trained in home nursing, whose future services should not be lost to the nation. There is also an urgent demand for better training in the essentials of first aid as applied to the needs of industry and as perhaps best illustrated by the practical results which have been achieved in the organization of first aid courses in mining under the direction of the U.S. Bureau of Mines in co-operation with the American Red Cross. Of considerable promise as regards the near future is the medical-unit plan of the Aetna Life Insurance Company, in successful operation in a number of industrial districts, one of which has been described in *Hospital Management*, December, 1918. The pioneer insurance company to undertake home nursing on a large scale is the Metropolitan of New York, the plans and methods of which have been worked out with admirable thoroughness under the direction of Dr. Lee K. Frankel. As a basis for a more effective organization and active cooperation of private and public agencies, a survey is required, more or less in conformity to the plan of Miss Helen F. Boyd, as described in her report on Public Health Nursing in Connecticut, issued by the State Department of Health, 1918. Among other recommendations, Miss Boyd includes the following:

1. There shall be appointed a public health nurse who shall be directly responsible to the State Commissioner of Health. She shall be a graduate, registered nurse with experience in public health work.

2. Her duties shall be: (*a*) To encourage communities to organize for the support of public health nurses where such an organization has not before existed. (*b*) To advise with associations or individual nurses already in the field as to the development of their work, especially in the line of child-welfare and tuberculosis work.

3. The first nurse as her work increases shall be given assistants, with the same qualifications for the work as she has, who shall, if the work justify it, be four in number, one for each of the sanitary districts. The first nurse shall supervise and direct the work of the assistants.

Mortality and Morbidity Statistics

The section on mortality statistics is not intended to include the work of the Division of Vital Statistics of the Census Office. It may safely be assumed as a foregone conclusion that the most serious objections would be raised against separating the Division of Vital Statistics from the Division of Population Statistics of the Census, both of which are closely interrelated in the primary object of disclosing the population and mortality tendencies of the nation, not only at different censal periods but during intercensal years as well. There are, however, other practical objections, among which perhaps the most important is the valid reason that the mortality data of the nation are, after all, the only

true index of health progress in certain well-defined directions, and that the control of the evidence relating to such progress should not be intra-departmental but extradepartmental, in so far as that can possibly be arranged for. No one has ever raised convincing objections against the office of the Registrar-General of England and Wales not being directly connected with the department of the Medical Officer of the Local Government Board, and while suggestions have been made for the transfer of this department to the proposed "Ministry of Health", the situation in England is, after all, essentially different from what it is in this country. The registration of diseases is quite another matter, since the morbidity is a much more correct current index of health and well-being than the mortality, even from strictly communicable or transmissible diseases. It may be said in this connection, however, that unless the existing methods of weekly abstracts of sanitary reports are materially perfected and improved in important details it would seem best to discontinue their publication entirely. This conclusion, however, does not apply with the same force to international morbidity statistics, where imperfections are more excusable. To publish statistics for one week and not for another and to leave gaps which frequently afterwards can not be bridged is to impair materially the true value of the returns under consideration, so that if they can not be improved they had better be done away with. Attention, however, may be directed on this occasion to the admirable plan worked out by the Division of Vital Statistics of the Census Office, under which weekly reports for some fifty representative cities of deaths from all causes and separately for ages under one are transmitted by wire and made public in a consolidated form through the Associated Press within three days after having been assembled. The value of this method was particularly emphasized during the recent epidemic of influenza and pneumonia.

To be continued.

Social Background

Standards of Child Placing*

MRS. A. D. FISHER.

I REALLY feel my little talk will not in any way measure up to the title used on the Programme. I feel very diffident about coming before you all, because I am not in any way an authority on Home Finding, what work I have done along this line has been so far very much of an experimental nature, and in addition I would like to say I do not pretend to be a public speaker, but being intensely interested in and very sympathetic toward the young dependent child, and from experience gained as a Board Member of "The Infant's Home," the idea was very forcibly impressed on my mind that Institutional Life, no matter how good the care might be, was not the life for the normal dependent child. I tried to study conditions and causes and work out the whys and wherefores of the cases which came to us, and have arrived at the conclusion that provided the right type of home is found for the right child that the Home Finding or Child Placing System is the most perfect solution to date for the care of the dependent child.

Let us, then, briefly look at the underlying theory which stresses Home Finding as against Institutional Life for the dependent child, the child who through desertion, inability or unsuitability of parents or friends to provide for it, or who through any of the cruel circumstances of life has to be handed over to public care. The family is the oldest human institution antedating both Church and State. It is the fundamental and necessary unit for the development of humanity and civilization. The home has always been the nursery of life. As the best physical, moral and social development of child life takes place in the individual home, we feel every effort should and must be made to handle the dependent child in this same way.

Among the advantages to be gained from the individual home as against the institution are the following:

*An address given on March 11th, 1920, for the Neighbourhood Workers' Association of Toronto, as one of a series of lectures arranged under the auspices of the Social Service Department, University of Toronto.

Dependent children would not have to be barred from admission to an institution owing to epidemic.

No child would have to be refused admission through an institution being overcrowded, this field is unlimited.

It would give individual and motherly care for the frail, ill-nourished, love-hungry little souls to whom life has been hard and cruel, and who have been denied wholesome family life, and what should be the one right of childhood, the right of a pair of mothers' arms about the child's neck, if not the natural parent, then some one whose love for little children is so great that the child (at least while young) may never know the difference.

The following testimony from one of the best matrons who ever lived, after many years' experience proves conclusively, I think, that institutional life for the child is not ideal, when she says, "Poor little children, we gave them love and good care, but we were obliged to deny them so much which rightly belonged to their lives as children. Young as most of them are, they know, feel and appreciate the advantages of the new way of individual homes, far better than we older ones."

Many people ask, is all this work with the type of children we have to handle, worth while, and if you could see many of the babies that are brought to the Infant's Home, you would feel this question was quite justified. However, the following extract from an address by Dr. L. Holt, Professor of Children's Diseases in Columbia University, would pretty well answer this question, and prove that we are quite justified in our efforts to save the lives of these babies. Dr. Holt says, "The problem of infant mortality is one of the great social and economic problems of our day. No resources of the State need so much to be conserved as do its children. A nation may waste its forests, its water power, its mines, and to some degree even its land, but if it is to hold its own in its struggle for supremacy, its children must be conserved at any cost. On the physical, intellectual and moral strength of the children of to-day the future depends. In all training and education physical consideration must come first.

Most children, who in infancy are regarded as physically unfit, were healthy at birth, and are merely the victims of a bad environment, improper feeding and neglect, conditions which it is quite possible to remove, and when the obstacles are overcome, these infants have the same chance to survive as others. How many of the world's brightest geniuses might have been lost? Who can say? It is hard to tell who are the unfit. A high infant mortality results

in a sacrifice of the *unfortunate* not the *unfit*. For example, take Newton, a posthumus child, so small and frail at birth they thought his life would be limited to hours, and yet, through skilful nursing and tending in early years he lived fourscore years and revealed to us the laws of the universe. If he had perished because weak when born, England would not have been what she has in the world. Is not the preservation of these precious little lives of our nation ? most sacred and patriotic work for us all just now, and should it not be carried on in the best possible way? It means service of the most vital kind to our country.

In defining Home Finding, we mean the finding of real homes for children, for days, for weeks, for months or for years, as the various cases demand, and after very carefuly inquiry and investigation, placing our children in good normal homes, where the individual, physical, mental, moral, religious and social development of each child is a matter for careful and constant supervision and oversight—oversight at once sympathetic and elastic in its understanding. With our plan of Home Finding our Homes will be divided into three classes—Free Homes, Boarding Homes and Homes for Adoption.

Take the first class: Many people are willing to take a child for a time at least who do not feel (particularly in the case of very young children) that they really do not want to adopt them at least, not till they know just what the child is like, etc., but are willing to give them a good normal home, provide for them, giving love and good care, but not legally bound in any way.

By the second class: Boarding Homes.—We do not mean baby farms or licensed homes where numbers of children are taken, but where possible we could find just the right home for some very delicate, ill-nourished child, where excellent care and love would be given, but where the actual expense, or perhaps in some cases, a little more, or maybe only the cost of special food, etc., would have to be met by us. Through payment many high class people as caretakers are to be found, who could not afford to give their services otherwise. Then, of course, the Homes for Adoption, you all know and understand. I might say, all the children put into homes by us would be under our care and supervision, and it would entail more and very expert workers to keep in touch with these cases, particularly outside the city, as our work increases, and would doubtless cost us a little more, but would a little extra expense not be warranted if it mean a material saving in child life?

Instances of what has actually been accomplished through this placing out in homes with individual attention of miserable puny babies, that had practically been given up to die, and yet they have lived and grown into healthy children. Some of these cases you would hardly credit, had they not been seen before and after, and their cases watched all the way through with special interest. Some people are very discouraging, and say it is not possible to get people to take these delicate children and care for them, either for love or money. This attitude does not in the least discourage me. I feel people who talk that way are lazy and indifferent and very unpatriotic, and I would indeed feel very sorry for the child born to people who feel this way, but I take courage and glory in the fact of the knowledge of many who are doing this work now, feeling if some people have been found to do it, there must be many others.

From appeals we have made we feel confident there are many good homes to be found. In this connection, a very touching incident, in response to an appeal we made, came to us in the form of a letter saying, "I will take a child and give it love and good care, my only child lies sleeping in France." Can you imagine anything more beautiful than this, a mother trying to ease her heartache and forget her yearning for her boy by giving love and care to one of these needy little ones? Also, another instance of a woman here in Toronto, who has already taken one child and loved it into the semblance of a real child, not an institutional child, then it was adopted out entirely. She is now ready to take another and do likewise for it. To quote her own words: "It is simply wonderful what a little love and care does for these children. Fatten them up a little, tie a big bow on their hair, put a pretty frock on them, and they will be taken off your hands long before you are ready to part with them." We realize that if this work is to be well done, it will be slow, take a great deal of time and patience, also a great deal of publicity, and we also realize the return in this work will be just in proportion to the amount of human effort we are willing to put into it.

We find many people, in fact, the majority, who want a child for adoption, want the prettiest baby we have, as a sort of beautiful doll, that they can dress up and play with, and while to me all our babies are beautiful, the really pretty child is the exception, rather than the rule, and in many cases, if we can come in personal contact with the foster parents and impress on them that they are not in any way bound to keep the child, but to take it and give it a trial, and just see what little real love and fondling will do for it.

We also try to impress on them that beauty is only skin deep, and there may be wonderful qualities awaiting development back of a plain face, or that they should consider how hard life has been for these kiddies, and that it might be an interesting experiment to take a picture of the child now when it is taken into their heart and home, and another after a year's loving care, and note the difference. A child will respond so quickly to love and attention, that the whole expression seems to change.

However, we believe, if this work is once understood and people able to grasp just what it will mean to our nation, good homes are waiting for all the children, the fire is burning, there is oil in the lamp, a place to play in the yard, there are vines or gardens, an apple tree or lilac bush to distinguish the seasons, and there are plenty of loving Christian men and women who will welcome children if the great need is brought home to them. It should not seem strange that this is true. The family must be the nation's salvation. Yes; just as truly as the sculptor sees the angel in the unseemly stone or the artist discerns a masterpiece in some musty, time-stained canvas in attic or cellar, so the heart of Christian motherhood sees the image of God in these neglected needly little ones, and that image restored through loving ministration and workmanship. The child is the hope of the nation, and the world moves forward on the feet of little children.

Every Health Officer should be a member of the Association.

The Provincial Board of Health of Ontario

CASES AND DEATHS REPORTED BY LOCAL BOARDS OF HEALTH OF COMMUNICABLE DISEASES FOR THE MONTHS OF MARCH, 1920.

COMPARATIVE TABLE.

	March, 1920		March, 1919	
Diseases	*Cases*	*Deaths*	*Cases*	*Deaths*
Smallpox	446	7	39	1
Scarlet Fever	560	29	445	10
Diphtheria	451	56	413	48
Measles	1256	23	39	0
Whooping Cough	136	31	69	4
Typhoid	27	7	13	3
Tuberculosis	213	173	242	196
Infantile Paralysis	.....	.....	18	12
Cerebro-Spinal Meningitis	1	1	.....	.....
Influenza	3055	502	.....	703
Acute Influenzal Pneumonia	.....	232		
Acute Primary Pneumonia	.....	602	.....	.....
	6143	1663	1278	977

NOTE.—The 703 deaths from Influenza and Pneumonia in March, 1919, was the 6th month of the epidemic which was disappearing from the Province.

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH FOR MARCH, 1920.

	1920	1919
	Cases	*Cases*
Syphilis	64	97
Gonorrhoea	77	183
Chancroid	2	4

NOTE.—It is quite apparent many cases are not reported by physicians as required by the regulations.

JOHN W. S. MCCULLOUGH.

The most gratifying feature regarding the health of the Province is the marked decrease in cases and deaths of Influenza and Pneumonia for the month of March compared with the previous month. During February we had 2,315 deaths reported, and for March 1,336, a reduction of 57%. Should this rate of decrease continue, which is most likely, the duration of the epidemic will be much shorter, with a greatly reduced death rate than the Province experienced in the first outbreak in 1918, when 5,623 deaths were recorded in the first two months.

Smallpox that has been prevalent in many localities in the Province since November last is abating. During the five months there have been 5,078 cases reported with 24 deaths. Of this number the City of Toronto contributed no less than 2,872 cases, or 54% of the whole. The cases and deaths by months are as follows:

	Cases	*Daeths*
November, 1919	1,128	0
December, 1919	1,433	2
January, 1920	1,188	6
February, 1920	883	9
March, 1920	446	7

Diphtheria shows a decrease from 636 cases and 70 deaths m January, and 551 case and 84 deaths in February to 451 cases and 56 deaths in March, or death rate of 12.0 in 100. Scarlet fever shows a reduction of 80 cases compared with February last.

"One-third of the quota of new members enrolled".—First report from Nova Scotia.

News Items

A well attended meeting of the Child Welfare Section of the Canadian Public Health Association was held in the Hospital for Sick Children, Toronto, on April 10th last. Dr. Lionel Lindsay, of Montreal, chairman of the section, presided. The splendid grant of $5,000 made to the section by the Canadian Red Cross Society, has rendered it possible for the Child Welfare Section to initiate immediately, a most energetic movement, along educational lines looking to the reduction of infant mortality throughout Canada. Close co-operation with the Federal, Provincial and Municipal Departments of Health will, of course, be effected. The appointment of a permanent full-time secretary for the section is to be made as soon as possible.

Dr. C. J. O. Hastings, Medical Officer of Health, Toronto, has been enjoying a well deserved rest in Atlantic City.

Dr. F. C. Middleton, of the Bureau of Public Health, of Saskatchewan, Regina, has been doing graduate work in Public Health in the Department of Hygiene, University of Toronto, during the past three months.

Dr. A. Grant Fleming has been appointed Director of Laboratories in the Department of Health, Toronto, at a salary of $4,000 a year.

The splendid film, "The End of the Road," was shown to packed houses in Massey Hall, Toronto, recently. Subsequent showings of the film in London, Windsor, Peterboro and elsewhere have also been made. This work is under the auspices of the Canadian National Council for Combating Venereal Diseases. Branches of the Council are being organized throughout Ontario and in the other provinces.

Dr. Gordon Bates, General Secretary of the Canadian National Council for Combating Venereal Diseases, has just returned from Montreal, where preliminary arrangements were made for the organization of the Quebec Provincial Branch of the Council.

Plans for the annual meeting of the Canadian Public Health Association for the Prevention of Tuberculosis, the Canadian National Committee for Mental Hygiene and the Canadian National Council for Combating Venereal Diseases, in Vancouver in June, are almost complete. Elsewhere in this number more details in regard to programme are given.

It is a pleasure to be able to state that Dr. Frederick Montizambert, of the Federal Department of Health, Ottawa, has quite recovered from his recent serious accident.

The deepest sympathy of THE PUBLIC HEALTH JOURNAL is extended to the Hon. Dr. Wm. F. Roberts and Mrs. Roberts, of St. John, in their recent bereavement.

The Provincial Board of Health of Ontario has had a large appropriation voted by the Legislature for work in Maternal and Child Welfare. Comprehensive plans for the work at present are being prepared. The Chief Officer of Health, Dr. J. W. S. McCullough, is to be congratulated on securing funds for this most important work. Miss Mary Power is in charge of the Child Welfare Bureau.

Dr. George D. Porter, General Secretary of the Canadian Association for the Prevention of Tuberculosis, has returned from Prince Edward Island, where he held a large number of most successful meetings. The Association has been requested to undertake campaign work in almost every Canadian province.

The Canadian National Committee for Mental Hygiene has recently received a grant from the Canadian Red Cross Society to aid in the valuable work which the Committee has in hand.

Dr. B. E. Guyatt has received an appointment in the Division of Venereal Diseases of the Provincial Board of Health of Ontario.

The Canadian Association for the Prevention of Tuberculosis will meet Monday and Tuesday, June 21st and 22nd, in Vancouver, under the Presidency of the Hon. Dr. Schaffner, of Winnipeg. Papers are already promised from Drs. Parfitt, Byers, Stewart, Vrooman and others.

Editorials

CANADIAN RECOGNITION OF THE SCIENTIFIC BASIS OF INDUSTRIAL HYGIENE.

WE publish in this issue an article emphasizing the importance of recognizing the relation of physiology to industrial working conditions. Physical health is the fundamental basis of efficiency, and, accordingly, it is in the interests not only of the general welfare of the nation, but of its material economic prosperity to discover the effects of all the various factors of working conditions on health and output. In a word, the article is a plea for the recognition of industrial hygiene as a science, and for the necessity of scientific investigation, research and experiment into its problems.

It is the object of the Committee on Industrial Fatigue, which has recently been formed under the Honorary Advisory Council for Scientific and Industrial Research, to act as a national information bureau on the principles of industrial hygiene, as they are evolved from scientific research or actual working experience, whether in Canada or elsewhere. It is hoped to make readily available for all who are concerned, Public Health bodies, Labour Departments, general welfare associations and manufacturers, information both on the general progress of industrial hygiene in Canada, England and the United States, and on the most recent and scientifically approved solutions of specific problems. The Committee is constituted as follows: Professor J. J. R. Macleod, Department of Physiology, Toronto University (Chairman); E. A. Bott, Pepartment of Psychology, Toronto University (Hon. Secretary); Professor Asselin, Department of Physiology, Laval University, Montreal; Professor C. Dagneau, Department of Physiology, Laval University, Quebec; Professor D. Fraser Harris, Department of Physiology, Dalhousie University, Halifax; Mrs. George Hambleton, representing women's organizations and social work; John Lowe, Esq., The Montreal Cottons, Ltd., Valleyfield, P.Q., representative of Canadian Manufacturers' Association; Dr. A. B. Macallum, Administrative Chairman, Honorary Advisory Council for Scientific and Industrial Research; J. A. McClelland, Esq., repre-

senting the Department of Labour, Ottawa; Professor Swale Vincent, Department of Physiology, University of Manitoba, Winnipeg; Professor J. Tait, Department of Physiology, McGill University, Montreal; Professor W. Tait, Department of Psychology, McGill University, Montreal.

Anyone desiring information or wishing to obtain the Committee's assistance in investigating any specific problem should apply to the Secretary, Committee on Industrial Fatigue, care the Medical Building, Toronto University. Eventually it is hoped to make the service of the Committee more quickly available for all Canada by establishing offices throughout the country.

Splendid—First returns from Quebec indicate that the number of new members being enrolled will exceed the quota by fifty per cent.

Joint Congress

8TH ANNUAL CONGRESS CANADIAN PUBLIC HEALTH ASSOCIATION

51ST ANNUAL MEETING OF CANADIAN MEDICAL ASSOCIATION
CANADIAN ASSOCIATION FOR PREVENTION OF TUBERCULOSIS
CANADIAN NATIONAL COMMITTEE FOR MENTAL HYGIENE
CANADIAN NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES

VANCOUVER, WEEK OF JUNE 21, 1920
Public Health Sessions, June 21, 22, 23.
Canadian Medical Sessions, June 22-25th.

Convention Headquarters, University of British Columbia.

Transportation.—Summer Tourist Tickets will be on sale. These rates are practically as low as special convention rates on certificate plan, and have the advantage of stop-over privileges, and are good returning till October 31st.

Following are Summer Tourist Rates from:

Winnipeg—$73.00(?)+.75 war tax.
Toronto—$110.65+$1.15 war tax return
Halifax—$169(?)+$1.75 war tax.
} To Vancouver or Victoria (no extra charge to Victoria).

If routing via Sarnia and the Great Lakes (or Port McNichol) there is an additional charge of $10.10 to include meals and berth while on steamers.

Routing by C. P. R. to Vancouver, returning by Grand Trunk Pacific Steamers to Prince Rupert, and east by Canadian National Railways, via Edmonton, can be arranged without extra charge. Trip from Prince Rupert to Vancouver is most enjoyable passing through sheltered inland channels the entire distance. Two nights and one day are spent on these steamers. The extra charge is $10.65 to cover meals and berth.

For further information consult your local railroad agent.

Pullman Reservations.

There will be *no* special car from Toronto. Reservations should be made at the earliest date, in view of the number of large conventions which are being held at the coast in June.

Hotel Accommodation.

	Rates.
Abbotsford, 921 Pender W.	$2.00—$3.50
Alcazar (200 rooms), corner Dunsmuir and Homer	$1.50 up
Balmoral, 155 Hastings East	$1.50—$2.50
Barron, Nelson and Granville St.	$2.50—$4.00
Castle (150 rooms), 478 Granville St.	$2.00—$4.50
Dunsmuir, 500 Dunsmuir St.	$2.00—$3.50
Lotus, Pender and Abbott	$1.50—$3.50
St. Regis, Dunsmuir and Seymour	$1.50—$2.50
Vancouver (C.P.R.) (480 rooms), Georgia and Granville Street	$4.00—$7.00

The Committee on Accommodation urge that reservations be made at the earliest possible time with the hotels direct, or failing that, to communicate with Dr. Colin McDiarmid, Secretary of the Committee, Birk's Buildings, Vancouver.

Entertainment.

You will be delighted at the reception which you will receive in Vancouver. Special entertainment for the ladies is being arranged.

Side Trips.

The Triangular Trip, Vancouver, Victoria and Seattle.

Howe Sound (one day) to Chilliwack by electric car, to Nanaimo by steamer.

Shorter trips to Capilano Canyon, Stanley Park (9 mile drive; Point Grey Marine Drive. North Shore Marine Drive. Steveston (Salmon Canning), New Westminster.

PRELIMINARY PROGRAMME.

Monday, June 21, 9 *a.m.*—Registration

FIRST SESSION.
10.30a.m.—12.30 p.m.

Canadian Association for Prevention of Tuberculosis (First Session).

Section Meetings.
Canadian Public Health Association, Child Welfare, Social Hygiene, Mental Hygiene.

SECOND SESSION.

Monday, June 21, 2 *p.m.*
Presidential Address—H. E. Young, M.D., C.M., LL.D., *Victoria.*
Symposium: "Canadian Public Health, Its Organization and Progress"—
Led by Dr. John A. Amyot, C.M.G., Deputy Minister of Health, *Ottawa, Ont.*
Followed by Dr. W. H. Hattie, *Halifax, N.S.*
Hon. Dr. W. F. Roberts, *St. John, N.B.*
Dr. J. W. S. McCullough, *Toronto, Ont.*
Dr. Stuart Fraser, *Winnipeg, Man.*
Dr. M. M. Seymour, *Regina, Sask.*
Dr. W. C. Laidlaw, *Edmonton, Alta.*
Dr. H. E. Young, *Victoria, B.C.*
Representative, Canadian Association for Prevention of Tuberculosis, and Representative of the Canadian Red Cross Society.

THIRD SESSION.

Monday, June 21, 8.30 *p.m.*
Presidential Address, Canadian Association of Prevention of Tuberculosis—Hon. Dr. F. L. Schaffner, *Winnipeg, Man.*
"The Association's Programme of Child Welfare for 1920"—Dr. Lionel L. Lindsay, *Montreal, P.Q.*
Canada's Need for Child Welfare Work—Miss E. M. Forsythe, *Toronto, Ont.*

FOURTH SESSION.

Tuesday, June 22*nd*, 9.30 *a.m.*
Canadian National Committee for Mental Hygiene.
Executive Committee—9.30-10.30 a.m.
Annual Meeting—10.30 to 12.
Canadian Association for Prevention of Tuberculosis (Third Session).

Section Meetings—Canadian Public Health Association, 9.30-11.30 a.m.
Child Welfare, Social Hygiene, Laboratory Workers.
11.30-12.00 *noon*—Address—Hon. J. D. McLean, Minister of Education, *Victoria, B.C.*
12.30-1.30 *p.m.*—Complimentary luncheon by Rotary Club of Vancouver.

FIFTH SESSION.

Tuesday, June 22*nd*, 2.00 *p.m.*
Encephalitis Lethargica—Dr. Gordon Bell, *Winnipeg, Man.*
Symposium on Veneral Diseases.
"The Venereal Disease Problem in Rural Districts"—By Dr. M. M. Seymour, *Regina.*

"The Problem in Small Cities and Large Towns"—By Hon. Dr. Wm. F. Roberts, *St. John, N.B.*
"Venereal Disease Control in Winnipeg"—By Dr. Gordon Bell, *Winnipeg, Man.*
"The Relation of the Canadian National Council for Combating Venereal Diseases to the Programme of Venereal Disease Control"—Dr. Gordon Bates, *Toronto, Ont.*
Discussion to be led by Dr. J. A. Amyot, C.M.G., *Ottawa*, and Dr. J. W. S. McCullough, *Toronto.*

SIXTH SESSION.

Tuesday June 22, 8.30 *p.m. University Auditorium.*
"The Federal Government and Public Health."—Dr. John A. Amyot, C.M.G., Deputy Minister of Health, *Ottawa, Ont.*

SEVENTH SESSION.

Wednesday, June 23*rd*, 9.30 *a.m.*
10.30 *a.m.*—Canadian National Committee for Combating Venereal Diseases (Annual Meeting).
9.30 *a.m.*—Joint Session with British Columbia Hospitals Association.
Symposium on Nursing.
Nursing Standards—Miss Helen Randall, *Vancouver, B.C.*
The University in Relation to Nursing Education—Miss E. Johns, *Vancouver, B.C.*
The Organization of a Public Health Nursing Service—Miss Jean Brown, *Regina, Sask.*
The Role of Voluntary Societies in a Public Health Nursing Service—Mr. Riddington, Librarian, University of British Columbia, *Vancouver, B.C.*
The Co-ordination of State and Private Enterprises in Public Health Nursing Service—Dr. W. H. Hattie, *Halifax, N.S.*

EIGHTH SESSION.

Wednesday, June 23, 2 *p.m.*
Business Meeting of the Canadian Public Health Association.
Amendments to Constitution.
Report of Treasurer and Budget, 1920-21.
Reports of Special Committees.

Wednesday, June 23*rd*, 8.15 *p.m.*
Public meeting under auspices Canadian National Committee for Mental Hygiene.
1. Chairman's Remarks—Dr. Charles F. Martin, *Montreal.*
Moving Pictures and Lantern Slides Depicting Phases of Mental Hygiene Activities—Dr. C. K. Clarke and Dr. C. M. Hincks, *Toronto.*
3. Address—Hon. Dr. J. D. McLean, Provincial Secretary, *Victoria.*
4. The National Work of the Canadian Committee for Mental Hygiene—Dr. C. K. Russel, *Montreal.*
5. Public School and Mental Hygiene—Principal W. H. Vance, *Vancouver.*

SECTION OF CHILD WELFARE.

FIRST SESSION.

Monday, June 21*st*, 1920, 10.30 *a.m.*
Report Committee on Heredity and Eugenics.
Report Committee on Vital Statistics.
Report Committee on Public School Education *re* Infant Mortality.
Report Committee on Mothers.

SECOND SESSION.

Tuesday, June 22nd, 1920, 9.30 *a.m.*

Report Committee on Obstetrics.
Report Committee on Pediatrics.

THIRD SESSION.

Wednesday, June 23rd, 9.30 *a.m.*

Report Committee on Rural Communities, Nursing and Social Work (Joint Session with the British Columbia Hospitals Association).

SECTION OF MENTAL HYGIENE.

Monday, June 21, 10.30 *a.m.*

Chairman's Address—Dr. C. K. Russel, *Montreal, P.Q.*
"The Rôle of the Psychiatric Clinic in a Community"—Dr. Gordon S. Mundie, *Montreal, P.Q.*
"Delinquency and the Mental Defective"—Dr. C. K. Clarke, *Toronto, Ont.*
"How We Should Deal With the Mental Defectives"—Dr. C. M. Hincks, *Toronto, Ont.*
(Title to be decided later)—Dr. A. T. Mathers, *Winnipeg, Man.*

LABORATORY SECTION.

Tuesday, June 22nd, 9.30 *a.m.*

Chairman's Address—Dr. H. C. Jamieson, *Edmonton, Alta.*
Paper (Title to be announced)—Dr. J. B. Collip, *Edmonton, Alta.*
(Further details of programme not at hand.)

SECTION OF SOCIAL HYGIENE.

FIRST SESSION.

Monday, June 21st, 10.30 *a.m.*

Treatment of Venereal Diseases.

1. Treatment of Gonorrhoea—Dr. F. S. Patch, *Montreal, P.Q.*
2. Treatment of Syphilis—Dr. E. J. Trow, *Toronto, Ont.*
3. The Rôle of the Laboratory in Venereal Disease Control—Dr. R. H. Mullin, *Vancouver, B.C.*
4. Serum Diagnosis in Gonorrhoea—Dr. H. C. Cruikshank, *Toronto.*

SECOND SESSION.

Tuesday, June 22nd, 10 *a.m.*

Social Aspects of the Venereal Disease Problem.

1. The Work of the Committee of Sixteen, Montreal, and Some Discussion of the Law Enforcement Problem—Rev. H. Symonds, *Montreal, P.Q.*
2. Correction and Rehabilitation in Relation to the Venereal Disease Problem—Mrs. Arthur Murphy, *Edmonton, Alta.*
3. Educational Possibilities—Mrs. L. A. Hamilton, *Toronto, Ont.*
4. The Relation of Provincial Health Departments to Social Service, Law Enforcement and Follow-up in Connection with Venereal Disease Control—Dr. W. C. Laidlaw, *Edmonton, Alta.*

Discussion to be led by Dr. W. H. Hattie, *Halifax, N.S.*

CANADIAN ASSOCIATION FOR PREVENTION OF TUBERCULOSIS.

Monday, June 21st, 1920, 10.30 *a.m.*

Report of General Secretary—Dr. G. D. Porter.

Diseased Teeth as a Factor in Production of Lung Disease—Dr. J. Roddick Byers, *St. Agathe, Que.*

Some Canadian Mortality Tables—Dr. C. D. Parfitt, *Gravenhurst, Ont.*

Some Changed Viewpoints in Connection with Tuberculosis—Dr. D. A. Stewart, *Manitoba*

Monday Evening, June 21st, 1920, 8.30 *p.m.*

Presidential Address—Hon. Dr. F. L. Schaffner, *Winnipeg, Man.*

Tuesday, June 22nd, 1920, 9.30 *a.m.*

Paper (to be announced)—Dr. Farris, *St. John, N.B.*

Paper (to be announced)—Dr. A. F. Miller, *Kentville, N.S.*

Some X-Ray Interpretations—Dr. J. T. Case, *Battle Creek, Mich., U.S.A.*

PRELIMINARY PROGRAMME.

CANADIAN MEDICAL ASSOCIATION

VANCOUVER, JUNE 22-25.

Address in Medicine—Charles Lyman Green, M.D., St. Paul, Minn.

Address in Surgery—Edward Archibald, Montreal—"Surgical treatment of ulcerated intestinal tuberculosis as occurring chiefly in course of pulmonary tuberculosis."

SECTION OF MEDICINE.

C. F. Martin, Montreal—"Relation of Metabolism to Clinical Medicine."

A. H. Gordon, Montreal—"Treatment of Hæmmorhage in Medical Disease."

Wm. House, Portland, Ore.—"Occultism and Insanity."

Dr. MacAllister, New Westminster, B.C.—"Facial Expression in Various Types of Insanity."

J. A. Ollie, Toronto—"Functioning of the Heart in Cardiac Disease."

W. Goldie, Toronto—"Signs and Symptoms of Gastro-intestinal Diseases."

A. R. Robertson, Vancouver—"Cerebral Syphilis."

W. S. Lemon, Rochester, Minn.—"Pulmonary Abscess."

N. B. Gwyn, Toronto—"Encephalitis Lethargica."

N. B. Gwyn, Toronto—"Influenzal Empyema."

R. H. M. Hardisty, Montreal, and G. E. Richards, Toronto—"Diagnosis of Gastric Diseases."

G. S. Strathy, Toronto—"The Action of Arsenic on the Liver."

G. H. Manchester, New Westminster, B.C.—"Shell Shock."

H. A. Lafleur, Montreal—"Spleno-medullary Leukymea; Treatment by Benzol and X-rays."

John P. Manning, Seattle, Wash.—"Continuous Fever in Children from Streptococci Infection in Blood Stream, with Recovery."

M. A. Smith, Halifax—"Modern Treatment of Gastric Disease."

J. A. McGregor, London—"To be announced."

H. A. McCallum, London—"To be announced."

Lionel M. Lindsay, Montreal—"Recent Advances in Our Knowledge of Rickets."

SECTION OF SURGERY.

J. McKenty, Winnipeg—"Acute Intestinal Obstruction."

Hadley Williams, London—"Series of Acute Perforations of the Duodenum and Stomach."

W. S. Galbraith, Lethbridge, Alta.—"Surgical Achievements of Small Western Hospitals."

A. Gibson, Winnipeg—"The Need of Exact Anatomical knowledge in Nerve Surgery."

A. T. Bazin and A. Ross, Montreal—"Acute and Chronic Intestinal Obstruction."

E. W. Allen, Edmonton—"Carcinoma of Colon."
D. W. Graham, Swift Current, Sask.—"Œsophageal Strictures."
J. E. Lehman, Winnipeg—"Pulmonary Abscess."
Roland Hill, Grand Rapids, Mich.—"The Traumatic Abdomen."
M. Sharpe, Brandon, Man.—"Locan Anæsthesia."
N. J. Maclean, Winnipeg—"Duodenal Ulcer."
H. A. Bruce, Toronto—To be announced.
J. S. McEachren, Calgary—To be announced.
H. J. Hassard, Portage la Prairie—To be announced.
W. J. Stevenson, London—To be announced.

Symposium on Thyroid.

F. N. G. Starr, Toronto—"Goitre and its Treatment."

C. C. Tatham, Edmonton—"Observations and Results of the Surgical Treatment of Goitre."

G. A. Bingham and G. E. Richards, Toronto—"Correlation of the Results of Treatment by Surgical and X-ray Method."

J. M. Pearson, Vancouver—"The Medical Aspect of Goitre Treatment."

Genito-Urinary.

W. W. Jones, Toronto—"Ureteral Stone."

J. E. A. Campbell, Vancouver—"Some Phases of Syphilis."

Charles H. Hair, Toronto—"Genito-urinary Infections."

G. S. Gordon, Vancouver—"On Examining and Operating by the Endocystoscope."

G. S. Whiteside, Portland, Ore.—"To be announced."

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Robert Ferguson, London—"A Plea for Better Obstetrics."

W. P. Graves, Boston—"Immediate and Late Results from the Use of Radium for Non-malignant Uterine Bleeding."

Louis Frank, Louisville, Ky.—"Radium in the Treatment of Cancer of the Uterus."

H. P. Newman, San Diego, Cal.—"Certain Considerations and Recommendations in Special Plastic Surgery of the Cervix Uteri."

A. C. Hendrick, Toronto—"The Bleeding Uterus, Its Pathology, Diagnosis and Treatment."

August McLean, Detroit—"Thrombosis and Emboli in Abdomen."

H. M. Little, Montreal—"Modern Obstetrical Technique."

J. W. Duncan, Montreal—"Toxæmia of Pregnancy."

John C. Hirst, Philadelphia—"Operative Treatment of Cystocele in Women of Child-bearing Age."

George H. Noble, Atlanta—"Principles Involved in Surgical Relief of Downward and Backward Displacement of the Uterus."

T. H. Crawford, Calgary—"The Kidneys in Pregnancy."

J. F. Percy, Galesburg, I'll.—"Heat the most Practical and Promising Treatment in Uterine Carcinoma."

F. L. Horsfall, Seattle, Wash.—To be announced.

Section of Orthopaedics.

V. P. Gibney, New York—"Development and Scope of Orthopaedic Surgery."
A. R. Macausland, Boston—"Treatment of Fractures."
A. Gibson, Winnipeg—"Treatment of Habitual Dislocation of Shoulder."
H. P. H. Galloway, Winnipeg—"Treatment of Fracture of the Neck in the Femur."
James Patterson, Vancouver—"Painful Feet."
Fred H. Albee, New York—"Osteoplastic Surgery."
E. G. Abbott, Portland, Me.—"Compression Fracture of the Spine."
Winnett Orr, Kansas City—"What Can we do for the Hopeless Cripple?"

Section of Eye, Ear, Nose and Throat.

G. B. Fletcher, Winnipeg—"Modern Uses of the Bronchoscope."
Scott Monchief, Victoria—"Ætiology of Idiopathic Iritis and is Rarety in India."
J. Rosenbaum, Montreal—"Interstitial Keratitis."
Sterling Ryerson, Toronto—"The Uses of Radium in Opthalmology."
The following will contribute papers on X-ray work: W. A. Wilkins, Montreal—"The Diagnostic Value of X-ray in Pulmonary Tuberculosis." Dr. J. C. McMillan, Winnipeg—Title to be announced; and others.

"1,000 members before the Congress in Vancouver in June". Recommend one new member and you will be doing your full share.

Preliminary Programme, Ontario Health Officers' Association

MAY 25TH AND 26TH, 1920.

Medical Building, University of Toronto.

President's Address, E. B. Oliver, Fort William.

"The Flu in Rural Districts," A. Nichol, Sebringville.

"Public Health Advancement During the Year," J. W. S. McCullough, Toronto.

"Venereal Diseases," R. R. McClenahan, Toronto.

"Modern Treatment of Syphilis," E. J. Trow, Toronto.

"Modern Treatment of Gonorrhoea," Kendal Bates, Toronto.

"Obstetrics and the States," K. C. McIlwraith, Toronto.

"Toronto as a Pediatric Center," Alan Brown, Toronto.

"A Maternal and Child Welfare Division for Ontario," Mary Power, Toronto.

"Some Observations on Quarantine," Fred Adams, M.O.H., Windsor.

"Ventilation," A. H. Wright, Toronto.

"Diphtheria in a Calf," J. H. Radford, Galt.

At the request of the Canadian National Council for Combating Venereal Diseases Allen's Theatres, Ltd., have arranged to show the film, "The End of the Road," in Massey Hall at 10 a.m. on the 26th.

Prince Edward Island is leading in the National Membership Campaign—90% of its quota of new members already enrolled.

The Public Health Journal

Vol. XI. JUNE, 1920 No. 6

Industrial Hygiene

By J. W. S. McCullough, D.M., D.P.H.

Chief Officer of Health, Ontario.

Read before the Annual Meeting of the Ontario Safety League, Toronto, April 13th, 14th, and 15th.

I HAVE been invited to speak to you on the subject of Industrial Hygiene, which is a most important branch of preventive medicine, having to do with a large proportion of the population, the workers so-called. Most of us, except the very wealthy, are obliged to work, but while the well-to-do may choose their work, their manner of working, and their environment, the poorer amongst us often have to work to keep body and soul together at anything which will bring the means of livelihood, at trades which are unhealthy, in poor quarters and under conditions which take a toll of life and health greater than the actual work itself. It is in the utilization of the principles of industrial hygiene that work and the conditions of work may be improved and the worker, compelled to seek occupation in unhealthy industries, may find the conditions so improved that the dangers to his health and life may, in so far as possible, be mitigated or removed.

Workers on this continent have so far failed to reap the benefits of industrial hygiene to the extent these benefits have accrued to the workers of England and the continent. Some assistance has come through the efforts of organized labour which has exerted a good influence in limiting the avarice of the employer, in shortening the hours of labour, in increasing wages, and in the improving of sanitary conditions, but much remains to be done.

Modern conditions of labour are very different from those of a century a half-century or even of a generation ago. Machinery has worked miracles in labour, but with machinery has come increased danger to life. Of all the labour-saving machines invented, however, there is none so

vital and indispensable in the production of wealth as the human machine —and at the same time there is none so sensitive and delicate. Both from the standpoint of humanity and the standpoint of economy the human machine deserves greater care and consideration than any other mechanism engaged in the production of wealth. Yet it is a fact that while the ordinary machine is oiled, cleaned and cooled and kept in the most careful repair, the human machine is expected to run day in and day out with no particular care on the part of the employer that this delicate mechanism shall be kept in constant repair. It has been the habit to work the human machine for all it is worth, which when worn out and dies, is forgotten the next day.

Certain industries are particularly dangerous to health, such as lead-poisoning in the manufacture of white lead, in painting, and in type-setting; of the phossy jaw in the use of white phosphorus; of caisson disease in divers and compressed air workers; in railroading, mining and among workers with explosives; there is particular danger to those working in dusty atmospheres, in the fumes of carbon monoxide, hydrogen sulphide or mercury. Certain diseases set up nervous conditions and infectious diseases such as anthrax, glanders, and hookworm, are acquired in certain occupations. Influences such as improper light, poor ventilation, lack of cleanliness, overcrowding, excessive hours, fatigue, and a hundred and one conditions may affect the health and efficiency of the worker.

The losses consequent upon the failure to maintain healthy conditions in places of employment fall upon both the employee and the employer. The former loses his health, the latter loses financially from the want of efficiency of the employee. It is well-known that the number of industrial accidents increase progressively as the day progresses, being fewer in the early morning, increasing towards noon, dropping after the noon period and again increasing towards evening. Thus it is seen that fatigue becomes a factor in accidents. Overwork is found to be a danger not only to the worker himself, but also to the public, whose lives may be endangered by the overworked train despatcher, trainman, conductor or engineer.

Minors

Most countries have laws limiting the age at which minors may go to work. This is a valuable measure not only for the protection of the health of children, but also in the interest of their education and development. Certain of the more dangerous trades should not be open to minors, such as lead-working, bronzing and cutlery grinding, naphtha works, textile factories, melting and annealing glass and many others.

Women

Women are not physically capable of doing the same work as men, particularly during the period of maternity and during menstruation. This is important not only in the interest of women alone, but it has an important bearing on the future of the race, it being well-known that the life and strength of the unborn child makes it necesssary that women should be exempt from severe labour for several weeks before and after labour, the latter particularly because the baby needs the care and attention of its mother in order to thrive properly. Experience in the Lancashire district of England during the cotton famine and in the seige of Paris showed that in spite of privation the rate of infant mortality fell greatly—in Paris 40 per cent. below that of normal times, and in industrial centres like Fall River, Lowell and Lawrence, the infant mortality rate is twice as high as in similar towns without factories and no overcrowding.

No woman should be permitted by law to work at a dangerous trade. Saleswoman should be provided with seats and should have one or two day's rest each month. Women's work in the home needs supervision. Their work is "never done" and its results are seen in the anaemic, tired and worn faces of housewives which may be observed in every street of the city and in every country district. The long hours and close confinement of domestic servants, the excessive heat in cooking, the unventilated sleeping quarters, send large numbers of this class to hospitals and outdoor clinics.

Factory Inspection

Factory inspection under a proper law and with inspectors who are familiar with the law, the process of manufacture, and having a good knowledge of preventive medicine is of the greatest value to the worker. The factors of ventilation, dust, gases, odors, temperature, moisture, light, cleanliness, overcrowding, drinking water, child workers, washing and toilet facilities to the proper capacity, hours of work and rest, are among the many which should engage the attention of the inspector. Physicians make the best inspectors, because they should know more about health conditions.

Preventable Accidents

Of the preventable accidents those on railways, in mines and factories are the commonest and most striking. On this continent there are something like 30,000 deaths of wage earners and 500,000 or more seriously injured in our industries every year. There are in America over 3,000 deaths annually of those engaged in mining operations. Much

of this appalling disaster can be prevented. Fatalities are four times as common on our railroads as upon those in England. Indeed, a railway disaster with us is an accident; in England it is a crime. In Belgium the death-rate in mines since 1840 has been cut to one-third of what it was in the previous decade.

Some special injuries incident to work are:

Spinal curvature from faulty posture; flat feet and varicose veins from prolonged standing, as in nurses and shop girls; injuries to the eyes from metal splinters or stone fragments; impairment of eyesight from poor lighting; eye strain in garment workers and miners; rupture of the eardrum in compressed air workers; ear disease in boilermakers and gunners; injuries to the skin by violence and in laundries; chilblains in cold storage workers; ulcers in X-ray or radium operators, most of which is preventable.

Lead

In considering the various factors productive of injury to health of industrial workers, much of which may be readily prevented, that of lead poisoning is one of the most frequent, dangerous and insidious of all the occupations of man. We are apt to be impressed by an accident which has immediate and fatal consequences. For example, a pound of lead dropped from a height upon a man's head may easily prove fatal, but the daily ingestion of minute quantities of lead salts while slower, is equally fatal if means of prevention are neglected. The general population is liable to lead poisoning from various sources, such as drinking water conveyed by lead pipes; in canned goods from the solder; from foods cooked in lead-enameled utensils, or from handling lead or objects containing lead. Painters are very liable to lead poisoning. Young persons and women are also very liable to lead poisoning, and as long ago as 1898 English law abolished female labour in the processes of the manufacture of white lead. Persons with hyperacidity of the stomach, those who fail to thoroughly cleanse their hands before eating, and alcoholics have no business dealing with lead. The most dangerous lead industries are the processes involved in the manufacture of red lead, the fumes and dust of which are dangerous, in white lead manufacture, from the dust raised in stripping the "white bed" and in the manufacture of pottery and earthenware in which the dangers from lead poisoning and lung disease such as "potter's asthma" are very great. The dust raised in file-cutting carries a large proportion of lead, and besides, considerable is carried from unclean hands in the process of this industry.

Besides the dangers from lead poisoning in the industries already mentioned, there are upwards of 100 others in which lead is more or less used and with consequent danger to the worker. Some of these are:

Making and selling wallpaper; polishing brass and nickel; finishing cut-glass; holding lead-covered nails while shingling; working with aluminium foil in lithography; wrapping cigars in tinfoil; enameling bath tubs; stopping holes in wood with white lead; assembling and recharging storage batteries; diamond cutting; painting and printing trades.

Prevention of Lead Poisoning

The lead reaches the mouth and eventually the digestive tract of the worker through fumes and dust and from hands, particularly about the finger-nails of the careless workman. Consequently the ventilation of the factory must be ample and hoods should be provided with suction fan to carry off the dust and fumes. For the workman himself education is necessary. He should be taught the dangers of unclean hands, particularly at meal times. He should bathe the body frequently and have special clothes in which to work, for there is reason to believe that a certain amount of lead salt is absorbed by the skin.

Much may be done by giving advice to employees and employers along the following lines:

Employees

To prevent lead poisoning obey the following rules:

(1) Personal cleanliness
2) Clean hands
(3) Rinse mouth before eating
(4) Take a good breakfast; an empty stomach invites lead poisoning
(5) Never eat, smoke or chew tobacco while at your work
(6) If possible, eat outside the work room
(7) Avoid all excesses, especially alcohol
(8) Wear overalls or a long coat at work, gloves and cap
(9) In white lead or dusty lead work wear a respirator
(10) Consult a physician at first sign of trouble.

Employers

To prevent injury to employees:

(1) Provide washing facilities, lockers and out-of-workshop eating places
(2) Provide respirators for workmen
(3) Clean floors and benches of workshops, first moistening them
(4) Post up both regulations in conspicuous places in workroom.

Phosphorus

The next important poisonous trade is the manufacture of matches, the danger being from the use of phosphorus in the process. There are two kinds of phosphorus, the white or yellow and the red or amorphous.

The former is the dangerous one, and is used in the manufacture of the common strike-anywhere-match. The safety match contains no phosphorus. It contains potassium chlorate or chromate and the paste on the side of the box contains antimony sulphide and red phosphorus. Friction of the one against the other produces a light. The common match contains the poisonous white phosphorus in the lead with glue, chlorate of potash, powdered glass and some colouring matter. There is another strike-anywhere-match which has the non-poisonous sesquisulphide of phosphorus in the lead. These matches have been used exclusively in France for the last 12 years.

The disease caused by white or yellow phosphorus is a necrosis of the jaw called the "phossy jaw." It begins as an inflammatory infection which runs a chronic course and causes localized death of the bone. So dangerous is the disease that in Belgium a prize of 50,000 francs was offered by the Government to whoever would invent a strike-any where match free from white phosphorus. The prize was won by two Frenchmen and the match is used entirely in some continental countries.

Prevention

(1) By the prohibition of the use of white or yellow phosphorus in matches. This was done in Great Britain in 1908. In many continental countries its use in the manufacture of matches is prohibited. In 1913 a prohibitive tax upon white phosphorus was adopted in the United States.

(2) By medical and dental inspection and treatment of carious teeth.

(3) By personal cleanliness and the use of mouth washes.

(4) By proper ventilation of factories, and provision for washing facilities.

Arsenic

Arsenic is used to a large extent in certain industries. This chemical is an irritant to the skin and mucous membranes setting up inflammation of the eyes, eczema and ulceration of the skin, general poisoning and neuritis.

Some years ago the writer then engaged in medical practice was called to see a man, who with his wife was visiting his wife's relatives. He was ill of vomiting and diarrhoea; his eyes were swollen and his hair was falling. Treatment of the digestive disturbance gave relief for a few days when the symptoms would break out afresh. Careful examination led to the belief that he was suffering from arsenical poisoning and suspicion attached to the wife, but proof was lacking. A nurse was procured who was instructed to allow the sick man nothing but what she gave him. This was much resented by the wife who was quietly told that her hus-

band was being poisoned, and that if she interfered suspicion would probably attach to her. Subsequently to the engagement of the nurse the sick man improved and it was discovered that the husband had been dosed with an infusion of Wilson's fly pads. The man recovered completely and the wife was warned that any recurrence of his malady would land her in gaol. They lived (so far as I know) happily ever afterwards.

Arsenic is found in wallpaper, painted toys, gloves, ribbons, calico, artificial flowers and many colours, confectionery, etc.

Arsenical poisoning is found among workers in the manufacture of Scheele's green, wallpapers, artificial flowers, in the packing of white arsenic and reduction of arsenical ores, in curing furs, in paperhangers, milliners and handlers of Paris green, the latter of which is in common use for suicidal purposes. Free ventilation and clean hands are the best means of prevention.

Mercury

Workers in mercury acquire anaemia, headache, dizziness, tremor of muscles, fetid breath, swollen gums, loose teeth, depression and melancholy. A persistent and apparently causeless diarrhoea is frequently a symptom of mercury poisoning.

Prevention

Similar to that for lead.

Carbon Monoxide

CO is colourless, odorless and highly poisonous gas which burns with a pale blue flame. It is the source of the blue flame seen on the surface of an ordinary coal fire. It is a gas given off in large quantities by coke ovens from blast furnaces in smelting iron, from hot water heaters, and is the cause of the deaths from ordinary coal self-feeders that one reads of in the newspapers during the winter months. Likewise, it is a product of the gasoline engine, and is the cause of death in the fatalities in public and private garages.

In the coke ovens of England, where men are obliged to enter to clean them out, two men always go together, one stands by in case of accident.

Time will not permit to describe in detail the many poisonous trades and the means of the prevention of accident and fatal results, but there may be mentioned hydrogen sulphide gas, a very stinking gas noticeable about privies which in the small quantities inhaled usually do no worse than cause nausea or headache, but which in large amounts may, if inhaled, cause death. Others of a more or less dangerous character are benzene, used in a variety of trades, aniline used in the manufacture of rubber goods, etc., as well as dozens of others.

Dusty Trades

Much ill-health is caused by the inhalation of dust in various trades. Some are poisonous, others act as mechanical irritants. The poisonous dusts have already been referred to, such as those of lead, arsenic, mercury, phosphorus, tobacco, wood, dyes and chemical works. The mechanical irritants are particles of iron, steel and other metals, granite and marble, coal, chalk and plaster of paris. The significance of the latter will be seen in the fact that while but 2.39 persons per 1,000 die of consumption in occupations without dust production the rate in stone-workers is 34.9 per 1,000.

Prevention

Much of the dust raised in industrial processes may be limited by proper machinery or preventive devices. Thus moisture or working the process under water may serve to keep down the dust, or wet grinding may be substituted for dry. Inclosed hoods with suction fans may be used to confine and suck away the dust. Good ventilation helps much. Respirator masks are required in some trades.

Textile Work

The danger from the dust and excessive humidity necessary in the work of textile mills may be largely removed by good ventilation, abundant airspace, cleanliness, good light and the use of improved machinery. The moist garments used in textile works should be changed for dry ones before going out in the cold air.

Wood Dust

Wood dusts, particularly those of boxwood, teak and redwood, have all an ill-effect on the worker, the alkaloids in these woods producing bronchitis and asthma.

Coal Mining

As we sit beside the coal grate in the stormy winter's night we rarely give much thought to the men who mine the coal in the bowels of the earth. We give more thought to the headlines in the paper indicating the rise of coal to unheard of prices, the exhorbitant (?) demands of the miners and how much rise of salary we must have to meet the high cost of coal and other incidentals in the high cost of living. We should not forget that the mining of coal is a most dangerous and unhealthy occupation. The underground work means poor ventilation, exposure to poisonous gases, and risk to life and limb. Sanitary conditions, though

improved of late years are still bad enough. The disposal of excreta is not well-managed in all of the mines, and this fact predisposes, particularly in the south to the development of hookworm infections, especially where the use of moisture in the mine is favoured for the prevention of explosions. The dust of coal is productive of a lung disease called "coal niners' phthisis (consumption)." This is not a tuberculosis like ordinary consumption, and besides backache, troublesome affections of the hands, knees and elbows are the fate of miners. The irritation of the dust is productive of cancer in some cases. Better ventilation, lighting, sanitation, shorter hours and better pay will cure many, but not all of the needs of the coal miner.

Effects of Heat

In the trades of firemen, stokers, workers in foundries and steel mills the excessive heat is productive of much illness, such as heat stroke and prostration, nervous diseases, anaemia, indigestion and kidney affections. Injury to the eyes occur in many cases as well as respiratory diseases and skin affections.

Infections

The infections acquired in trades are anthrax or wool-sorter's diseases from hides and hair, hookworm disease from pollution of the soil from fecal matter, glanders from horses and indirectly, tuberculosis. Of these the most important for us to consider in this place is perhaps anthrax, of which there are a few cases in Ontario every year, mostly in large tanneries where hides, imported from South America are treated. This affection may be prevented by the immersion of the hides (using gloves for the purpose) for five minutes in a 5 per cent. carbolic acid. Hair of various kinds may be disinfected by steam at 17 lbs. pressure for one hour, or by boiling for quarter of an hour in 2 per cent. solution of potassium permanganate and bleaching in a 3 or 4 per cent. solution of sulphurous acid, or by boiling in water for two hours.

Tuberculosis

This disease is often spoken of as the most important disease of occupation. It is at any rate the most important single problem in industrial hygiene. There is no doubt that dusty trades, poor ventilation, badly ventilated workrooms, sedentary occupations, fatigue, irritating fumes and long hours predisposes to the disease, but it is generally regarded that tuberculosis is contracted in infancy and childhood, manifesting itself later in life. The disease is unusually prevalent among grinders, engravers, compositors, stone-cutters, millers, bakers, plasterers, brassworkers, glass-cutters, furriers, weavers and other trades having a large amount of dust.

Physical Examination

There is no provision for the physical examination of workers and particularly of boys and girls just past the legal working age of 14 years. There is great need for such examination in order that men and women who for reasons of health may be quite unfit for certain kinds of work may be protected, that pre-tuberculous cases in young and old may be detected and proper means of treatment provided, and that cases of disease dangerous to associated workers may be eliminated.

Let me give you one or two examples. A friend of mine, a physician, employed a lad of 15 years as an errand boy. It was noticed during the past winter that the boy had frequent colds, but seemed otherwise well. By the merest chance it was learned that his mother had been ill for some months, and further enquiry disclosed that she had pulmonary consumption. The boy had a careful examination, and it was discovered that he had a focus of tuberculosis in one of his lungs. He was sent to the Preventorium and has gained 5 lbs. in a couple of weeks. A few months at the Preventorium will put him to rights, when he will be able to return to work. Further delay would probably have meant his early death from consumption. Or again, a man or a woman may have the mucous patches of syphilis in the mouth with or without knowing that he or she has the disease. The common drinking-cup, the use of which is prevalent in many factories, and which should be prohibited by law, is used by such a person. An innocent worker may then use the cup and acquire syphilis. Proper examination of the workers would stop this source of infection, and more, it would give opportunity for the infected person to secure treatment.

Industrial Hygiene Division

Every country should have an active well-organized division of industrial hygiene in its public health department. Such a division should be ready at all times to make a survey of the plants of manufacturing concerns in order to advise the employers regarding health saving devices, matters of first aid, and general sanitation.

A few years ago it was discovered by our district officer of Health that in the steel mills at Steelton the men were drinking from the hose pipe about the mills the ordinary raw water which was highly polluted and in consequence diarrhoea and typhoid fever were common. Men in a red-hot place like a rolling-mill will drink anything that is cold. The subject was taken up with the management, and water-coolers with pure water were installed and the hose-pipes so arranged that it was impossible readily to drink from them. The results were seen in improved health conditions.

Every industrial concern of any magnitude should provide means for first aid for its employees. The arrangements should be simple and not too expensive. I know of establishments which have provided elaborate operating-room equipment. Such is unnecessary. A Division of Industrial Hygiene would be able to give advice in such matters and might even arrange for lectures on general hygiene to the workers at the noon hour or in the evenings. The Provincial Board of Health is making provision for the establishment this year of such a Division which is bound to prove of immense value to the country.

Proper wash-rooms, lunch and cloak-rooms should be provided for employees. I had my attention called the other day to a women's clothing establishment in this city, where a little pen without any door, and 8 feet walls, was provided for a lunch-room, and at the noon hour the shop was swept and the fluff and dust from the shop floated into the lunch-room and over the food. Such conditions should not be allowed.

Women Workers

The most serious matter in connection with industrial work is the increased employment of women. It is serious from the point of view of the normal growth and development of the State. The greatest need of any country is a stable birth-rate and a low rate of mortality among infants. A few countries only show this. New Zealand, Australia, Norway, Sweden and Denmark are notable examples. But women cannot work in factories and raise babies. The mother's undivided attention is the most essential feature in the increasing of the birth-rate and the prevention of infant mortality. Let us consider for a moment the causes of the lowering birth-rate and the increasing infant death-rate. What are the causes? Some say ignorance and poverty. But it can be shown that among the best educated people, and in the midst of prosperity these conditions prevail. There is no country in the world where the system of education is better or the general mass of the people are better educated than in Scotland. Yet the birthrate of Scotland went lower in the last five years than during any former period of the history of that country. The people were earning more money than they ever did, everyone left at home had plenty of work. In spite of this the infant death-rate reached a deplorable figure in that coun. Bradford intry England, a textile centre, literally rolled in wealth during the war, yet the birth-rate sank to about 17 per 1,000 births, and the death-rate under one year rose to 132 or 33 per 1,000 more than that of Ontario. Let us turn to Connaught in Ireland, poor, steeped in ignorance, the people full of nonsense and ready for more; yet despite these conditions, the birth-rate of Connaught rose to 45, and the infant death-rate dropped to 50 and in some places to 35. What was the reason? The mothers stayed at home and nursed the babies and with a little more prosperity

and a little less ignorance all might have lived. I tell you in all seriousness, the mother is the greatest factor in saving the baby, and to do this she must be kept out of industrial work, or in spite of education, in spite of prosperity, in spite of everything else, the future of the state will be imperilled.

The City of Edinburgh, with a reputation as the modern Athens and with graduates of her University leading the medical profession in every part of the Empire, with churches as numerous and powerful as can be found anywhere, should have a better record than she has in the matter of slums and baby saving. The record of Edinburgh in respect to the protection of motherhood is unsurpassed only by that of Paris. There Simpson introduced chloroform much to the scandal of the godly to relieve the pains of childbirth; there Lister proved the value of antiseptic methods in preventing childbed fever; there Ballantyne began the study of ante-natal pathology and therapeutics and founded the first pre-natal bed in any maternity hospital. Yet Edinburgh in a year of unprecedent prosperity had a birth-rate of but 17.9 and during a cool summer an infant mortality of 132 per 1000 births.

Discussion

Mr. Orr, of the T. H. & B. Railway, Hamilton, in discussing Dr. McCullough's paper, brought out the fact that twelve years ago a despatcher on a railroad worked twelve hours each day, under great stress, and that conditions were now improved and a despatcher only worked eight hours. Mr. Orr commented generally on accidents in this country and the Old Country and stated that the G. T. R. had recently issued a statement to the effect that 80 per cent. of all their accidents in the past two years had been preventable.

The chairman asked Mr. Orr whether accidents on railroads were increasing or decreasing.

Mr. Orr replied that accidents were decreasing. In 1919 their company had gone for one week without an accident, and had a period of three weeks in 1920 in which there was no accident.

In discussing Dr. McCullough's paper, Professorr J. J. R. Macleod said:

"Dr. McCullough's paper has been of great interest to me, and I especially welcome his expression of hope that the Department of Health would establish a division of industrial hygiene. In this connection I am very glad to have this opportunity of telling you what the Dominion Government has already done in the way of assisting the development of industrial hygiene. The whole matter came very much to the fore during the war, and last summer the Honorary Advisory Council for Scientific and Industrial Research decided that it was the duty of the Government

to take steps to facilitate the progress of industrial hygiene in Canada. Accordingly the Committee of Industrial Fatigue, of which I am chairman, was formed. The committee includes Dr. A. B. Macallum of the Honorary Advisory Council whom you know, a representative of the Department of Labour at Ottawa, a representative of industry, and members of the departments of physiology of the various Canadian Universities.

"The functions of the committee are purely advisory and investigatory. Its general purpose is to bring industry and medical science into closer touch, so that the firms may benefit by a proper control of the health conditions of the workers. In order to promote this the committee has adopted three main measures. In the first place, it offers industry the help of scientific laboratories in solving health problems which arise in industry. In the second, it offers industry the use of a bureau where the most up-to-date information on every sort of health danger and on the corresponding preventive or palliative measures is kept. In the third, it is ready to co-operate with any member of industry in conducting surveys or investigations into such questions as sickness incidence, cause of lost time, etc., both in individual plants and in individual industries.

"I can safely say that the Government is concerned in all problems of industrial hygiene and is ready, both in the interests of increased production and in the interests of increased industrial health—the two things are inseparable—to do all in its power to promote healthy conditions in industry. The committee thinks that it can help manufacturers to save money—to put it crudely—by helping them to safeguard the health of their employees.

"Coming to practical details, the procedure would be somewhat on the following lines: a manufacturer in some industry where he recognizes or suspects harmful effects on the health of the workers would apply to us to know if the hazard was due to some avoidable cause, or, if not, what the best preventive measures were. We would have to inspect the problem to see if it was a feasible one for us to undertake. Then, if it were, the expenses of any further investigation which might be necessary, and which we would conduct in collaboration with the business management, would be borne in part by the manufacturer and in part by the Government, who, as I said, are vitally interested in the solution of such problems. Again, it might be that full knowledge of the solutions proved by the experience of other manufacturers in the same industry would render a special investigation unnecessary. In this case the committee would furnish an account of this reported work which the manufacturer could then apply. It is precisely for this purpose that we have established the bureau of which I spoke, where such information is at hand and will be kept up to date.

"I think I have explained our objects and it only remains to say, both to the firms represented here and through them to others, that if there is any problem in which they think we might be of assistance I hope they will let us know."

Miss Hutton, Secretary to the Committee on Industrial Fatigue, said:

"There is nothing further for me to say except to give the address of the Toronto office of the Committee on Industrial Fatigue and to tell you that as secretary, I shall be very glad to receive any questions or requests for information. The office is in the Medical Building of the University of Toronto and correspondence should be addressed to Miss R. M. Hutton. This office is the bureau of which Dr. Macleod spoke. I think we can say with confidence that we have up-to-date information on all aspects of industrial hygiene and have a great deal of material which should be of use to plant physicians, sanitary engineers, service and safety men and, indeed, to anyone who wants facts bearing on industrial health. For instance, to take one very common hazard, that of lead poisoning, we have information on its incidence, on the measures by which in certain plants it has been completely eliminated, on the best palliative measures in other plants, on the personal precautions in which all workmen should be educated, and on the medical treatment after poisoning has occurred. Or again, many trades have hazards of dust or fume inhalation. In these cases we could supply information as to the most convenient kind of gas mask, the best exhaust system or the most efficient type of hood. I have only instanced two hazards and have selected them at random. My object is simply to show that we aim at being a clearing house for reliable information on practical matters."

Mr. Wanzer, of The Steel Company of Canada, asked for information regarding protectors for coal dust and gases. He stated they were at present using protectors such as rubber mouthpieces, but that the men objected to them, claiming they were unsatisfactory. He stated that men working in the vicinity of tank cars and furnaces often have been taken to the first-aid room as they were suffering from the effects of gas. The present gas mask is cumbersome and heavy, and they are now looking for a simple and practical protector for the men.

Dr. Macleod replied that the gas and general conditions require investigation. He stated that in the case of coal dust the proper masks and ventilators would materially reduce hazards and offered to help his committee in the solution of this problem.

Mr. Falk, of The Henry L. Doherty Company, stated that in their natural gas operations they were using a mask known as the Improved Gasco Protector, and found this reasonably satisfactory. He informed the meeting that a new mask was being put on the market by the Draeger Company.

Accident Prevention in the Automobile Industry.

By Frederick H. Moody,

McLaughlin Motor Car Co., Ltd., Oshawa

Read before the Annual Meeting of the Ontario Safety League, Toronto, April 13th, 14th, and 15th.

BEFORE a meeting such as this, it would be a waste of time to enter into any lengthy explanation of the advantages accruing both to the company and to the individual employee, through a proper appreciation of safeguards throughout a plant. Their value, when applied rationally, cannot be overestimated. It is only when the subject is handled by a super-enthusiast, if I may use such a term, that the full effectiveness of safety engineering is sometimes injured. By that, I mean the case where the applications of safety measures would possibly encumber the machine, or the movements of the operator, so as to diminish production to such a degree as to more than offset the value of the protection thereby obtained. The subject must be approached rationally, never losing sight of the present day slogan of "Increased Production."

The automobile industry probably does not involve problems that are essentially different from those that prevail in any metal or wood working factories, as the processes that prevail are primarily the same as those found wherever wood and steel are worked. It may safely be said however, that there are few industries that employ such a wide range of machinery, as nearly every other trade is tributary to it in some degree in the supplying of its myriad wants. But this is considerably narrowed down in factories where the factory is actually built, by the fact that, there being so many parts more or less common to many makes of cars, numerous specialty firms have sprung into existence to supply these wants. This factor also helps the safety movements, as I think you will agree, that generally speaking, it is more feasible to manufacture one product under more ideal conditions, than if a wide range of quite dissimilar parts were made with the same equipment. The automobile plant is becoming more and more a group of specialty shops; that is to say, as automobile production is increasing, the practicability of having a quite separate department or plant, for each part of the car, is increasing. This, as previously pointed out, all tends towards safer conditions.

In the Oshawa plants of the General Motors Company of Canada, Limited, of which the McLaughlin Motor Car Company, Limited, is a subsidiary, there has been no concerted plan of accident prevention, although the movement has for years received every encouragement from the management. By this, I mean that while there is no safety engineer, safety committee, etc., the management, superintendents, foremen, etc., have shown so much interest in the matter individually, that the shops and machines are as fully protected as we think a good practice dictates.

A few instances of the protective measures in use will be cited. Every elevator in the plant, of which there are a number for moving cars, chasses and bodies between floors, has automatic rising gates at each floor, controlled by the movement of the elevator, remaining closed except when the elevator is in the immediate vicinity of each floor. These elevators are of the open type, and to prevent articles falling through the bars of the gates on the occupants a strip of heavy wire mesh is placed over each end of the elevator. The elevator shafts are also protected at night by heavy fire doors, as are also the openings between the various buildings; but this, of course, is required by the insurance underwriters.

The yard of the McLaughlin plant is L-shaped, and as there is a lot of traffic, of incoming express, and cars going out and in in the process of being loaded, the gate is made double, with an "in" and "out" opening. As the approach views are somewhat restricted this is a potent factor in preventing accidents.

You are all aware of the difficulty of coping with the tendency of men to hurry out, precipitately on the first sound of the quitting whistle. The consequent hustle makes it not overly safe for the peaceable person to be in the path of the departing employees, so the management permit the women employees to leave five minutes before the men, thereby avoiding the mad rush.

Special pains have been taken to thoroughly protect every belt, especially all those that come less than four feet from the ground. No standard types of guards have been adopted, but they all seem quite effective. The more prevalent type is that made up of four wooden posts, with wooden cross slats, rising to about six feet from the ground. Other types are made of heavy wire mesh, pipe, etc., more or less along the conventional lines. Also wherever a motor drive belt passes overhead the lower belt is encased in a trough.

Protective Devices in Wood Shop

The wood shop presents more field for protective devices than most of our shops, but the big difficulty experienced there is with the employees

not appreciating their value. Several devices have been developed and where used have proved effective. On the shaper we have a useful guard with both horizontal and vertical adjustments, which has the additional advantage of acting as a guide for flat work. The Jones guard is used on the jointer. The circular saws and planers both have guards of the overhanging type. The gainers are protected by a pan hanging on the operator's side, which prevents the table travelling too far should the operator trip over the machine. The usual hinged wire mesh guard protects the band saw, with the added feature of moveable guards for protecting the saw below the mesh guard. The shapers and gainers are used principally with special formed jigs, as most of the work in the automobile industry is productive. Much in the way of protection can be developed in the proper design of these jigs, and satisfactory results are being secured considering that these two types of machines are deemed the most dangerous in the wood shop. The immediate neighbourhood of these two machines is also rendered dangerous by the chips which they cut or tear off. For the larger machines special movable wire mesh screens are set on the floor around the machine, and nearby windows covered with mesh on account of possible broken glass. The smaller machines have fixed protection of the same type, as well as the suction system with which all machines are equipped. For certain types of work special adjustable ball jointed pipes are led right to the cutting head.

The suction system, as a means of purifying the air and carrying off dust, may well be counted as one of the best known safety measures and is in use in several places throughout our factories. Every polishing lathe in the plating shop has a suction pipe for each wheel, keeping the air so clear that the electric baths in the same room are not affected by the metal dust. Our numerous spray painting booths are all equipped with a fan so that each may be controlled individually. These booths are all of the same general cone shape, with the suction outlet at the inner end, the operator standing at the open end, entirely clear of all paint spray, which is effectively removed by the fans. The larger booths for body and chassis spraying, have two larger openings, while the wheel spray are quite small. In the engine block test room, a similar vacuum system draws off all the exhaust gases, each engine having a flexible connection to the overhead trunk line. A vacuum system is also employed for purifying the air of one of our final test rooms. Fumes from the dripping vats are drawn off in the same manner.

The sheet metal shop, machine shop, assembly room, mounting room, and other shops, are all equipped with a certain number of safety devices wherever the need for such devices has become apparent. But the big difficulty in the way of protective devices is not the question of devising

such a device, but the convincing of the operators that it is distinctly to their advantage to make use of them. A persistent educational campaign is required to bring this about, and in this direction we are now trying to move ahead.

First Aid Equipment

First aid forms an important part of the protective work, and in this our company has made good progress. We have a well-equipped first aid room, with other first aid points throughout the plant, all supervised by qualified first aid men.

I have here some of the literature which we are using in this educational campaign. The placards are posted throughout the factories, in conspicuous places where all who run may read, but the circulars are only placed in the hands of the foremen, who are supposed to impart the information to their men. The management are also securing a quantity of enamelled signs to be put up in the factories carrying such cautions as: "Think. If safe, go ahead;" "You can't afford to take a chance;" "Ring bell before starting elevator;" "Report unsafe places at once to your foreman;" and "Do not wear loose or torn clothing."

The safety movement is also aided by our weekly paper, "Motor Sparks," in which timely suggestions are offered.

All this literature is valuable in bringing before the men continuously the value of safety measures. But the real impetus to this movement from an educational viewpoint is the proper supervision of the work. It is in this that we believe our greatest progress is being made, our various heads, from the foreman up, interesting themselves in the movement. The men are encouraged by this means, and where great presence of mind is displayed in the prevention of some serious smash up, our president has been known to reward the men very tangibly.

Dangerous conditions often arise from the most unexpected quarters. For instance, oil and paint soaked waste in the paint shop has been the cause of more than one incipient fire from spontaneous combustion. The education of the men to collect this waste into proper receptacles, at regular intervals, for removal, is part of the safety movement. Dipping articles in the japan vats at too low a temperature has also caused subsequent fires in the ovens. Correct and intelligent supervision is overcoming all this.

Some of the plants in the United States have had safety movement with them for a long time. But it was not until November last that definite steps were taken to perfect a plan of central organization for the promotion of safety work throughout the various divisions of The General Motors Corporation. This inaugural meeting was held during

the session of the National Safety Congress in Cleveland. The degree of interest evinced by the G.M.C. may be noted by their having 16 delegates in attendance.

Central Safety Committee

The educational and publicity work of this centralized movement for the divisions of the General Motors Corporation is conducted by O. S. McQuistion, Inc., of Detroit, and the recommended plan of organization is as follows:

Appointment of a Central Safety Committee from among the managers and superintendents, the number of this committee depending upon the size of the plant. The Safety Engineer will report to this committee.

Direction

(*a*) Plant supervision by managers and superintendents. (Central Safety Committee.)

(*b*) Safety Engineer.

Education

(*a*) Bulletins.

(*b*) Pamphlets.

(*c*) Pictures:—Local—Plant; Motion Safety; Entertainment and Instruction, and slides Safety Instruction.

(*d*) Lectures—Short snappy talks, usually four minutes.

(*e*) Statistics—Accident; Canadian Labour; Foreign Labour, and other Industries.

Inspection

(*a*) Unsafe Conditions—Machinery; Transmission; Building and Property; and Sanitation.

(*b*) Safe Guarding—Physical Guards; Safe Practices; Improved Method and Influences.

(*c*) Good Housekeeping—System; Direction; Co-operation and Interest.

The above outline covers practically all phases of safety work and accident prevention.

The Central Safety Committee will appoint from among its members a committee on Education, whose duty shall be the supervision of all bulletins, pamphlets, pictures and lectures; a committee on inspection for the purpose of a careful supervision of unsafe conditions, safe guarding and good housekeeping, and a committee on statistical information

for the purpose of statistical knowledge of accidents and all other statistical information that has any bearing on accident prevention. All these committees in turn shall report their findings to the Central Safety Committee who will make a final decision. A shop committee, including the foremen, should be selected for the purpose of plant safety supervision. The point is to get all working on accident prevention.

A great deal rests with the Safety Engineer, who must be a safety man through and through; one capable of acting on all phases of the work; a live wire; a good mixer; one who can get to the superintendents; a man capable of promoting clear constructive thinking and a wholesome co-operation in every department of the plant; he must be an all around man.

Some of the duties of a Safety Engineer are as follows:

Each morning go over the accident report of the previous day and find a remedy to eliminate a repetition of preventable accidents, and make, if possible, a sketch of the machine, or place where the accident happened. Supervise the inspection of every machine in the shop each day and see that all safeguards are placed in good condition. Supervise the inspection of tools and equipment and report immediately on any defect found. See that the material on the floor is placed in safe order and not piled in a dangerous way. See that the floor is clean and in good condition—central passage clear. Make a daily inspection of drinking fountains, cuspidors and water closets, and see that they are kept clean and in good condition. See that the factory is well ventilated and all smoke and gases carried off. Give every injured man a pass for treatment. Note all near accidents. Supervision and direction of all monthly accident reports and all such other duties as pertain to the plant.

Four Accident Prevention Essentials

There are considered four essentials in accident prevention:

First—The manager, who must be won over to the necessity of accident prevention. The big essential is to have the manager back of all safety movements.

Second—The foreman, the next man, must also line up. As you know our first activities along accident prevention were devoted to safeguarding—the covering up of exposed gears and fly wheels; guarding of dangerous places, etc. All of this has only cut our accidents one-third so that now it remains a process of education, and the biggest man looming up in this education propaganda that must be put forth is the foreman. Care for the new man and protect all.

Third—The employee, who comes next, is the fellow we must get our message to. This must come through education. Have him see the necessity of wearing leggings in the foundry; goggles when grinding; the use of lifebelts, etc.

Fourth—The family is another avenue we may use to get our messages across. We can do this through the school and safety drives. Children learn safety easier than grown-ups. This is one of our best opportunities to teach accident prevention. Safety drives get people talking and thinking about safety and it must do some good. Accident prevention is worth while; it ranks with any movement ever started for the benefit of mankind.

Accident prevention is still in its infancy and our reward in the future shall be the number of lives we may save; the number of limbs kept on the bodies; the number of eyes that will continue to see, and the real happiness that the home may show where carelessness has not entered.

The foregoing resume shows what our parent, the General Motors Corporation, plans to do in the safety field, and this work will reach out to every division.

Shop Lighting.

By Kenneth A. McIntyre,
Electrical Engineer, Toronto

Read before the Annual Meeting of the Ontario Safety League, Toronto, April 13th, 14th, 15th.

MANY attempts have been made to determine the percentage of industrial accidents attributed to improper illumination. The estimates range from 23 per cent. upwards, and cannot be taken unqualifiedly, inasmuch as it seems impossible to secure an accurate classification of this kind. Poor illumination is certainly directly responsible for a considerable percentage of such accidents and indirectly responsible to an even greater extent. This general statement is borne out by the results of the study of an insurance company's accident statistics for one year. The number of fatal accidents in the months of December and January proved to be 40 per cent. more than might reasonably be expected were there the same number of daylight hours in winter as in summer.

Under poor and improper lighting an obstacle in the workman's path means tripping or falling with possibility of becoming caught in machinery. Ever since stairs have been invented human beings have been prone to fall up or down, and poor illumination favours the habit even though a broken limb or a broken neck be the penalty. Presence of shadows is also blameworthy.

Accidents are caused indirectly by injurious effect of improper illumination on the eyes, resulting in impaired visual powers.

Further, for humanitarian reasons, the eyesight of employees should be conserved.

The Postal Life Insurance Co., in its Health Bulletin No. 22 in 1918, states: "The visual faculty is life's most precious boon, yet from infancy to old age its wealth is squandered in ignorant and excessive use. Among the agencies that work injury to the eyes it is probable that our system of artificial lighting is the most destructive. The illumination in our homes offices stores, and factories is nearly always direct, concentrated and intense; whereas the most elementary science and knowledge of the laws of refraction teach that it should be indirect, diffused, and at least as mild as daylight. But a vastly greater number of victims of defective lighting systems are those whose vision has become gradually impaired through an unconscious effort to accommodate the eye to the glare of an electric bulb in its immediate vicinity. This growing weakness in the seeing power means reduced efficiency in every way."

Eye-strain is productive not only of headaches but of specific disorders of the system, as well as resulting in actual diseases of the eye, with blindness frequently the consequence.

The real test of illumination is the ability of the eye not only to discern details distinctly, but to continue the visual effort for a great length of time without eye-strain and fatigue.

Good Lighting Stimulates Production

Factory output or production is stimulated and improved by good illumination in various ways:

1. Increase production for same cost.
2. Greater accuracy in workmanship with consequent reduction of spoilage.
3. Reduced accident hazard.
4. Avoidance or at least reduction in eye strain.
5. Surroundings made more cheerful.
6. Work performed with less fatigue.
7. Order neatness and sanitation promoted.
8. Superintendence rendered more effective.

Such advantages are obvious and can be obtained through an annual expenditure of less than 1 per cent. of the pay roll. It is not difficult to realize many times over on the investment.

During the past few years perfectly good machinery has been scrapped without hesitation to make way for more efficient machinery in the endeavour to increase production and reduce its unit cost. We should not overlook the need of the man in charge of the machinery and to provide him with the very best working conditions. He is the vital factor.

Lighting is of two kinds, natural and artificial. The requirements for good lighting under both classes are much the same.

1. Sufficiency under all conditions.
2. Diffusion, *i.e.*—the avoidance of glare and of extreme contrasts of light and shadow.
3. Maintenance to ensure the conditions contemplated in the proper designs.

As the architect or engineer, who is abreast of times, gives, during the design of industrial structures, very careful consideration to the matter of natural lighting, before passing to the subject of artificial lighting, the following points on natural lighting are worthy of mention:

1. Where no overtime operation is in effect 65 to 75 per cent. of the work is done by natural light.
2. Lighting codes require double intensity of natural lighting over artificial lighting because light coming to the eye in daylight from all the

surroundings is much brighter than at night. Thus a more intense light is required on the work.

3. Light should be adequate for each employee.

4. Windows should be so spaced and located that daylight conditions are fairly uniform over the working area.

5. Intensitites of daylight should be such that artificial light will be required only during these portions of the day when it would naturally be considered necessary.

6. Quality of light should avoid glare due to sun's rays or light from the sky shining directly into the eye. Window shades or awnings should be provided where necessary to this end.

7. Ceilings and upper portions of walls should be maintained a light colour to increase effectiveness of lighting.

8. Among the special means of improving natural lighting may be mentioned saw-tooth roof construction, skylights, and the use of prismatic glass to redirect light into the working space.

9. Wire glass should be used as safeguard where there is danger of glass falling if broken.

10. Some factory laws require the use of clear glass in lower sections of windows as enable employees to exercise long range vision to retain that power.

11. Windows should be cleaned regularly at proper intervals.

We now come to the subject of artificial illumination. Its importance has kept pace with the growth of modern industry, but its proper consideration is only too generally neglected, yet 25 per cent. to 35 per cent. of work is performed under artificial light. Production often demands more than one working shift and even where this is not the case, adequate illumination must be continuous regardless of length or brightness of days. Because of limited time electric lighting only will be discussed.

At the outset it is well to realize that the incandescent lamp in its present stage of development is many times more efficient than the lamps of ten or fifteen years ago; it is available in larger units and at reasonable prices. Its brilliancy has also greatly increased, which introduces a serious problem.

Artificial lighting must comply with the requirements for good illumination set forth earlier in this paper. Complete satisfaction cannot be obtained if one of them is neglected.

In considering illumination measurements are made in units of intensity of illumination such as distances in feet or weight by pounds. The unit of intensity is known as the foot-candle and is the intensity of illumination produced on a surface one foot distance from a lamp of one candle power.

Measurements are made by means of an instrument called a photometer. A simplified form known as the "Foot-candle meter" is in general use and is sufficiently accurate for practical purposes.

The first requirement is sufficiency. Intensity will be determined largely by the colour and fineness of the materials in process of manufacture. Since an object is seen only by the light it reflects, dark objects will require higher intensities as does also work requiring more accuracy.

The intensities must be sufficient whether working surfaces are in horizontal, oblique or vertical planes.

For an average value intensities in a vertical plane will be approximately one-half those in a horizontal plane of the same installation.

Diffusion, the second requirement, avoids glare, which is defined as "Brightness within the field of view of such excessive character as to cause discomfort, annoyance or interference with vision. An exaggerated and familiar example of glare and its effects is met at night in attempting to drive on a highway under the spell of unprotected headlights approaching.

In problems of illumination the degree of glare depends upon six principal factors:

1. Total candlepower emitted by the source in the direction of the eye.
2. Distance from the source to the eye.
3. Intrinsic brilliancy of the source.
4. Contrast in brightness between the light source and the working surfaces and surroundings.
5. Proximity of the light source to the line of vision.
6. Length of time during which the source of glare is present within the field of vision.

Another form of glare is so-called specular reflection, in which case the image of a bright light source is reflected from a highly polished surface. This is especially trying because it is necessary to keep the eyes directed towards such surfaces when working on them and the eyes by nature are much more sensitive to light rays entering from below.

The avoidance of extreme contrasts require the illumination of surrounding surfaces as well. Thus the eye is not called upon constantly to change its adjustment from one extreme to the other. Aisles and passages for this reason must be well lighted.

The foregoing considerations lead to one conclusion—general lighting from overhead. It is thus possible to keep the light source somewhat above the line of vision and to secure uniform distribution by choice of proper reflectors correctly located as to mounting heights and spacing.

The use of drop lights should be avoided except when absolutely necessary because of very fine character of work or shadows cast by parts of machinery. The lamps should be covered from view by suitable reflectors.

Incandescent lamps are available in sizes 10 watt to 60 watt in vacuum type and 50 watt to 1,000 watt in gas filled type for choice to meet any conditions. Their average life is 1,000 hours of burning and at the end of that period their efficiency is within 6 per cent. of initial value.

Voltage fluctuations, if frequent and considerable, have a bad effect. Low voltage decreases candle power, over-voltage shortens lamp life. The lamp should be selected for the average voltage of the circuit. Light and power circuits should be kept separate if possible to minimize fluctuations of voltage. Copper sizes in wiring should be sufficient to keep voltage drop within 2 per cent.

Light emitted from incandescent lamps contains the colours of daylight and is not unpleasing to the eye. A type is available which approaches the colour value of daylight.

The effect of frequency in the use of alternating current for lighting has been a matter of investigation in order to detremine the critical frequency below which it is unsafe to go, but it is difficult to define what constitutes objectionable flicker. Incandescent lamps are least sensitive to low frequencies so far as flicker is concerned. For Physical reasons the smaller sizes up to 25 watts show a perceptible flicker on 25 cycle circuits, though in larger units the flicker is not evident. Much of the annoyance displayed by some people must be due to suggestion and imagination. The case is cited of the man who worked for months under 25 cycle lighting without knowing it. Upon having the flicker called to his attention, he suddenly developed headaches and eye-strain. Flicker can seldom be observed by looking directly at the light source or at the plans of illumination. Due to the fact that the periphery of the retina is more sensitive to flicker than the centre, flicker can be detected out of the corner of the eye by looking directly at an object to one side of the light source. In general, it may be stated that for factory lighting no difficulty will be encountered except for very fine work under small size lamps for local lighting.

Three methods of general lighting are available, direct, semi-indirect, and total indirect. The two latter are more suitable for illumination of offices, stores and buildings other than factories. Being inverted, they accumulate dust under average factory conditions unless cleaned very frequently.

Since an unshaded lamp sends no more than half its light below the horizontal, it is necessary to make use of reflectors.

In considering reflectors for a direct lighting system, the size of lamps must be first decided according to intensity required, spacing and mounting heights, which factors are determined by dimensions and structure of the building.

Reflectors may be divided into the broad classes:

Extensive
Intensive
Focusing.

The former being used for moderate heights of mounting and the latter for greater mounting heights. In a brief article, time does not suffice for sufficient detail of illumination design and the statements are therefore more or less in the form of an outline.

Reflectors may be obtained in these three styles, but made of various materials, a list of which with comments follows:

Porcelain Enamelled Steel are strong, durable, reasonably efficient, reflecting surface does not deteriorate and can be easily cleaned, restoring to original condition.

Paint Enamelled Steel should only be used for temporary work since they are usually of light guage metal and surface deteriorates rapidly. Cleaning cannot altogether restore the surface to original condition.

Aluminized Steel has almost gone out of use in favour of porcelain enamelled steel. Strong, but the surface when dirty can only be restored by refinishing.

Mirrored Glass are breakable and require careful handling. Makes are available which show maximum efficiency over all other types of reflectors, the reflecting surfaces of which do not depreciate. Are opaque.

Prismatic Glass are breakable and require careful handling. Designs are available which give excellent results and have the added advantage of permitting light to pleasantly illuminate the ceiling and other upper surfaces. The makers claim low depreciation due to dust accumulating because the refracting and reflecting prismatic surfaces are not affected.

Opal Glass reflectors are not so efficient as prismatic glass, but the same remarks apply. They give excellent diffusion.

An interesting development is a combination steel and glass reflector recently designed which permits a portion of the light to escape to the upper parts of a room.

It is important in using low mounting heights to either use bowl frosted lamps, or to supply diffusing or reflecting caps over the tip of the lamps to hide the bright filament from view.

Lighting systems should be conveniently controlled by switches either local or in sectional cabinets. Circuits should run longitudinally so that central spaces can be lighted first as twilight approaches.

It is important to provide emergency from a separate source if possible so that in case of failure of the main lighting and power system employees in emergency are able to find exit.

Watchman's circuits should be provided giving just sufficient light for safe vision in walking and to detect intruders.

Yard lighting should not be overlooked in the interest of safety. The need for stair and passageway lighting has already been mentioned.

Last, but not least, is the requirement of maintenance to ensure good lighting. According to a recent and comprehensive articles the best practical method involves:

1. The use of a depreciation factor, or factor of safety in the original design of the system to ensure adequate illumination when the system has depreciated a normal amount.
2. The cleaning of lighting units at frequent, regular intervals.
3. The replacement of lamps which have become blackened in service by abnormally long life.
4. The use of lamps at correct voltage rating for all replacements.
5. The refinishing of ceilings and walls at reasonable intervals.

This method should not stop with a knowledge of and a desire for it, but it should be organized as a regular part of the shop routine. Tests show that after a period of neglect illumination can be increased anywhere from 25 per cent. to 100 per cent. by merely washing the units.

Lamps in use below rated voltage will show for each five volts below rated voltage a decrease in candlepower as follows:

5 volts—15 per cent. loss.
10 volts—29 per cent. loss.
15 volts—41 per cent. loss.

so this point is one we can ill afford to pass by.

The great need for education on the subject of factory illumination is forcibly illustrated by data recently gathered in 446 industrial plants by trained observers. 85 per cent. of the manufacturers interviewed were more or less satisfied with their present lighting conditions, and yet only 40 per cent. of the plants visited were adequately lighted. Better illumination was needed in 60 per cent. of them.

The intelligence of men interviewed on the subject was rated as:

Intelligently informed 44.5 per cent.

Vaguely informed 36.4 per cent.

Not informed 20.1 per cent.

A further astonishing disclosure shows that there were more plants burning bare lamps than there were plants with lamps entirely equipped with reflectors. Here is the call to safety organizations for an educational campaign for the benefit of employees' welfare and safety.

The educational efforts of the Illuminating Engineering Society and of safety organizations have already resulted in legislation in several states in the United States.

The lighting codes thus made law are a logical step to follow in the path of industrial legislation. The requirements set forth in them are designed to protect the operators who must work for long hours under the conditions day after day. They are the very minimum consistent with consideration of the workers' health. They do not, however, ensure the most economical production, for which result much higher intensities are necessary.

These codes are in force in California, Pennsylvania, New Jersey, New York, Ohio and Wisconsin. A partial table of the Wisconsin requirements for intensities is given herewith:

EXTRACTS FROM WISCONSIN LIGHTING CODE

Order 2112—Artificial Light.

When the natural light is less than twice the minimum permissible intensities of illumination set forth in the following table, artificial light shall be supplied and maintained in accordance with the table. The intensities of recommended practice indicate the desirable illumination for best working conditions.

ILLUMINATION INTENSITY AT THE WORK IN FOOT CANDLES

	Minimum Permissible Intensity	Ordinary Pracrice
(*a*) Roadways and yard thoroughfares	0.02	0.05—0.25
(*b*) Storage spaces	0.25	0.5 —1.0
(*c*) Stairway, passageways, aisles	0.25	0.75—2.0
(*d*) Toilets and Washrooms	0.5	1.5 —3.0
(*e*) Rough manufacturing, such as rough machining, assembling, rough bench work, foundry floor work	1.25	2.0 —4.0
(*f*) Rough manufacturing, involving closer discrimination of detail	2.0	3.0 —6.0
(*g*) Fine manufacturing, such as fine lathe work, pattern and tool-making, light coloured textiles.	3.0	4.0 —8.0
(*h*) Special cases of fine work, such as watchmaking, engraving, drafting dark coloured textiles	5.0	10.0—15.0
(*i*) Office work, such as accounting, typewriting, etc.	3.0	4.0 —8.0

Note:—The measurements of illumination are to be made at the work with a properly standardized portable photometer.

The minimum foot candles specify the lowest illumination intensity with which the employees can be expected to work with safety when artificial light is used. It is to the advantage of the employer to provide the intensities of the ordinary practice, as this results in less eye strain, greater accuracy of workmanship, increased production for the same labour costs and less spoilage. When part daylight and part artificial

illumination is used it is desirable to use even higher intensities than those of ordinary practice in the table above. (See note accompanying Order 2111.)

In order that the illumination intensities shall never fall below the minimum during the interval between inspections installations should be designed to produce initial values at least 25 per cent. higher.

Note that measurements are taken at the work regardless of its position whether in a horizontal, oblique or vertical plane.

In conclusion it should be realized that the science of illumination has made tremendous strides in the past few years. The installation of more than five years which has not been properly revamped during that period is now obsolete. The design of a modern efficient and satisfactory system of lighting is no hit and miss proposition but requires the services and best thought of an expert.

Surely in all the provinces of Canada to-day there is the most glaring need for education and legislation to abolish the evils of harmful illumination and to bring to the aid of Canadian industry in its forward march the powerful ally of good shop lighting.

Discussion

In discussing Mr. McIntyre's paper Mr. H. L. Sheen, Canadian General Electric Co., Limited, Toronto, said:

Mr. McIntyre's very excellent paper on "Shop Lighting" is in accord with the latest recommendations of the Illuminating Engineering Society embodied in the lighting codes now in force in seven states in the United States.

The whole problem in a nut shell is summarized by the words, "Sufficient light properly diffused" and the advantages as far as health and safety are concerned:

Reduction of Accidents.

Better working and living conditions.

Greater contentment of employees.

Order, cleanliness and neatness in the plant.

Easier supervision.

Advantages with regard to production include greater accuracy in workmanship, decreased spoilage of production and increased production for the same labour cost.

Considerable assistance can be given to factory managers who have not the time to go into tenchicalities on lighting by making up recommendations on a watts per square foot basis. A very useful table for connecting foot candle illumination with watts per square foot for certain standard equipments is now available.

So thoroughly convinced are all who have made a study of lighting that adequate illumination is an important factor in accident prevention that the codes above referred to are now published. I understand that no attempt has been made to enforce the law until now, but the inspectors will begin right away a systematized inspection of industrial plants, following this inspection with proper recommendations for illumination. I am sure that Mr. McIntyre will agree with me that such legislative action would be most advisable in Ontario, and in fact in all of the provinces of Canada.

Mr. Martin: How is a man to judge the correct voltage to use at home. He may be using a stronger voltage on some circuits than on others and an electric stove will affect the other parts of the house.

Mr. McIntyre: As the voltage is different for the different centres in Ontario you should ask the city department what the voltage is, and then use accordingly.

Mr. Wanzer: Why do the factories use beaded or frosted glass for the lower section of the windows? Is it because the men may become distracted from their work or is it because of the light?

Mr. McIntyre: This point was covered in my paper. In the United States the lower part of the window must be of clear glass so that the workmen may exercise their powers of long vision, as they may become very short-sighted from close application to work.

Mr. Hawkins: Is it possible in case of an emergency to influence the rival firm to give you service? They would be able to carry a load large enough to make it worth. Would the Ontario Safety League have any influence in this connection?

Mr. Martin: Perhaps you could install a small storage system to take care of this.

Mr. Hawkins: This would run up into several thousands.

Mr. Little: It comes to my mind while on the subject of installation, a demonstration of a double reflector for fine machine work, where the operator wants a strong light on his work. Usually while there is a bright light on the tool or lathe the worker who, apart from that, is in a very dark situation. This new reflector is a double one, the outer shade is green and the inner one is painted white, thus assuring a soft lateral light on the eyes. From these a strong light is thrown on the work and soft one on the eyes.

Mr. McIntyre: This is a very good point.

The chairman then called on Mr. Wills Maclachlan for his paper on and demonstration of "Resuscitation."

A Plan for a More Effective Federal and State Health Administration

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(*Continued from the May issue*).

Misleading Sickness Statistics

The ascertainment of the true rate of sickness in a given community or in a selected group of persons is a much more difficult task than the determination of the approximate death rate. Death is a strictly definable term whereas the terminology of disease defies precise analysis.* Earlier inquiries into the subject of disease prevalence bear in some respects evidence of greater intrinsic merit than more recent efforts in this field of statistical research. Regardless of decidedly better opportunities for statistical and medical investigation, the same conclusion applies to sanitary surveys, which only too frequently are made without the required qualified knowledge of the underlying technical principles and the most accurate methods of statistical inquiry. There has, for

*There is much need of a more adequate and strictly scientific treatment of the subject of death and the duration of life, physiologically considered. Among the more important discussions are the chapter on death by James Ritchie, in the treatise on "General Pathology", by Pembrey and Ritchie, and a brief discussion by Adami in the text-book of pathology by Adami and McCrae. The discussion of death and particularly of the lesions leading to sudden death, as determined by post-mortem, in the text-book of pathology by Delafield and Prudden, is of exceptional value. The subject, of courset has quite a literature, which has been admirably summarized in an article on "Death" with special reference to physiological variations, by W. H. Howell, including a long lis, of references, in the Reference Hand Book of the Medical Sciences, vol. iii, 3d edit., New York, 1914. To those who are concerned with the so-called "Causes of Death" the recently published work on "Causation", with a chapter on belief, by Charles A. Mercier, M.D., London, 1916, will prove of the very greatest value. This work includes an extended discussion of the so-called "causes of death" on the basis of a well-reasoned theory of causation opposed to the doctrines of John Stuart Mill. See also in this connection two exceptionally valuable articles on "The Causes of Diseases", by Ernest S. Reynals, M.D., reprinted in the *Scientific American Supplement* for February 16th and February 23rd, 1918. Of additional value is the treatise on "The Origin of Disease", especially of disease resulting from intrinsic as opposed to extrinsic causes, by Arthur V. Meigs, Philadelphia, 1897, and the earlier work on the "Causation of Disease", with an exposition of the ultimate factors which induce it, by Harry Campbell, London, 1889. In these and many related matters only a thoroughly equipped research department, can render the exacting scientific aid required, if results of far-reaching value are to be forthcoming. Such research may extend over many years and the results for a long time may be both costly and disappointing.

illustration, been no more comprehensive investigation into the sanitary conditions of the City of New York than the report made by the Council of Hygiene in 1865. By way of contrast the so-called "Sickness Census" of the Framingham Community Health and Tuberculosis Demonstration is an excellent illustration of the serious shortcomings of present-day superficial methods of inquiry. Thus, for illustration, it is said in this report that "It is interesting to note that the number of individuals per family recorded in the census (4.52) is a higher rate than the average for the community at large as based on the 1915 census (4.49)". There, of course, is nothing interesting or suggestive in a differential percentage which disappears if the figures are reduced to the first decimal; yet the conclusion is drawn from a difference of only 0.03 per cent. that this "is probably due to the fact that the census covered a higher percentage of adjacent urban population than of pseudo-surburban village and rural population". The pretense of knowledge implied in this assertion is as regrettable as the obviously erroneous conclusion itself.

In the same investigation the terms "health census" and "sickness census" are used interchangeably, although, of course, neither one is precisely the equivalent of the other. The "census" itself is made to include diseases as such as well as conditions contributory thereto, or resulting therefrom. The term "disease" is not defined, but the request in the house to house inquiry for information was for either the disease *or the cause* of sickness. Clearly upon such crude assumptions no satisfactory medical, social and economic results can possibly be secured. By combining all diseases and conditions, the group defined as "sick" is made to include such cases as "run down", "nervousness", "cold", and "old age". The analysis is not by sex, so the correct incidencc in proportion to the population cannot be determined, since the total sickness rate in the population is misleading when maternity cases or puerperal affections are included in a return for both sexes combined.

Of much more practical value are the sickness surveys of the Metropolitan for a number of representative cities. The sixth community survey of this company is for the principal cities of Pennsylvania and West Virginia, including special observations on the disease liability of coal miners, iron and steel mill employees, and females in coal miners' families. Of value, also, is a Health Census of Chelsea Neighbourhood, New York City, made jointly by the Metropolitan and the Chelsea Neighbourhood. Of still greater value is the sickness survey of Dutchess County, New York, by the State Charities Aid Association. Those who are employed in connection with inquiries of this kind are, however, generally wanting in the required technical qualifications. Sickness surveys, like sanitary surveys or industrial surveys, demand an exceptionally high order of trained intelligence. Henry W. Rumsey, in a

series of essays and papers on "Some Fallacies of Statistics Concerning Life and Death, Health and Disease", London, 1875, forcibly directed attention to the numerous fallacies inherent in the use of crude data, most of all when the underlying physical and pathological facts and conditions were but imperfectly understood. Rumsey was one of the first to suggest the collection of sickness statistics, observing in an address delivered as early as 1859 that "a public registration of sickness would provide a natural and obvious means of correcting mere statements of apparent results, often certified as the 'cause' of death on a cursory review of the dying or the dead". Limiting himself at the time to the registration of disease in poor-law institutions, hospitals, etc., he took occasion to point out, however, that "We may admit that even if all the diseases thus relieved and recorded were uniformly registered by competent authorities, a large proportion of sickness would still escape public notice, unless and until by the voluntary co-operation of medical practitioners the registration were extended to cases occurring in the higher and middle classes of society". In his volume of collected papers Dr. Rumsey refers to a final report of a committee of the British Medical Association, dated August 22nd, 1874, recommending to the Local Government Board the establishment of a national system of registration of diseases. Charles E. Paget, some twenty years later, published his classical essay on "Wasted Records of Disease", in which every question pertinent to the present consideration was raised, though left unanswered during the twenty years which have intervened since Paget's eloquent appeal was made jointly to the medical profession and the general public. The time has come when this demand for more trustworthy information concerning the prevailing rate of sickness can no longer be disregarded by those in public authority or by the members of the medical profession engaged in private practice. The data are required for social and economic purposes as a basis for practical measures of urgent reforms in the conditions which affect the life and the well-being not only of our wage-earners, but of the population at large.

Contrarily to the assumption that useful data of this character would be forthcoming under compulsory health insurance, the experience which has thus far been had conclusively proves that the information secured would be of decidedly limited intrinsic value.* Since a system of compulsory health insurance itself is largely responsible for a considerable

*For a full discussion of the important question as to whether the statistics derived from compulsory sickness insurance are of intrinsic value, and useful for public health and actuarial purposes, see the treatise by Wm. A. Brend, M.D., on Health and the State (p. 305, et seq.). See also his observations on the practical impossibility of correlating the provisions of the Insurance Act to the improvement of insanitary conditions on the basis of sickness experience data (p. 249, et seq.).

amount of malingering,* alleged sickness or exaggerated slight affections, the statistics secured under an experience of this kind are more generally misleading than scientifically conclusive. The practical solution is a simple requirement under which all authorized medical practitioners contribute the results of their individual experience to a collective investigation under the control of the state. A concrete illustration of what may be achieved in this direction, even on a purely voluntary basis, is the Collective Investigation Record of the British Medical Association, including contributions by Prof. Humphry, Sir W. Gull, Sir James Paget, and others, and comprehending such important questions as the communicability of phthisis, a report on acute pneumonia, chorea, acute rehumatism, etc. What was possible on a voluntary basis in 1883-84 should certainly be feasible, if necessary, on the basis of a statutory requirement at the present time.

Modern Methods of Health Education

It is possible on the present occasion to make only a brief reference to the suggested section on health education and health propaganda. The most serious objections lie against any form of ill-considered or superficial publicity, which while relatively rare is nevertheless sufficiently common to suggest an urgent word of caution. A single serious error or ill-considered statement of advice is likely to do more harm to a health organization, whetehr Federal, State or municipal, than all the good attained through a mass of irreproachable public utterances. The utmost caution is called for and only what is of real value should emanate from a Federal or a State health department, irrespective of the public clamour during a period of exceptional excitement, such as all are familiar with who passed through the epidemic of infantile paralysis or the still more recent one of influenza.† There is nothing more menacing to a public

*The most important works on malingering, with special reference, however, to the English experience under Workmen's Compensation and National Health Insurance, are the following: Malingering or the Simulation of Disease, by Jones and Llewellyn, London, 1917; Malingering and Feigned Sickness, by Sir John Collie, M.D., London, 1917; there is also an earlier work on malingering by Sir John Collie, issued in 1913, which is useful as emphasizing the increase in the tendency to malingering during recent years. A convenient summary of the evidence is included in the treatise on Health and the State by Wm. A. Brend, M.D., New York, 1917. See also my discussion of this question in Facts and Fallacies of Compulsory Health Insurance, 1916, and the Failure of German Compulsory Health Insurance, New York, 1918, in which the evidence is derived from German sources and is practically brought down to date.

†The danger of unwise publicity was never more forcibly illustrated than by the ill-advised action on the part of the Board of Health of the City of New York during the infantile paralysis epidemic of 1916. The public has a right to a statement of the facts and it is equally of right entitled to be protected against the dissemination of wrongful and misleading information, conjectures, theories and mere guesswork opinion

health service than a publicity department which considers it its duty to issue a continuous stream of bulletins, press notices, etc. It is absolutely unavoidable under such circumstances that, sooner or later, information or advice of an untrustworthy character is given publicity. The public has a right to be protected against the dissemination of ill-considered information or so-called "health news", which may be, and often is, seriously misleading or needlessly alarming. The field of health education has been enormously expanded during recent years, particularly through the co-operative efforts of health promoting agencies such as the American Public Health Association, the National Tuberculosis Association, the American Society for the Control of Cancer, the National Safety Council, the Association for the Prevention of Infant Mortality, etc. More active governmental participation in the work of these associations would materially aid in the highest attainable degree of success on the part of the Federal and State health administrations. In addition thereto, of course, the annual and special conferences of State and Territorial health authorities, under the auspices of the Federal health service, fulfill a most important function. There can be no thoroughly effective cooperation between Federal and State health authorities, unless the officials concerned know one another and know one another well.

Of the many national organizations and activities all of which are more or less in the nature of health promoting agencies, aside from those previously referred to, the following are of special importance: The Eugenics Record Office, Cold Spring Harbour; The International Health Board of the Rockefeller Foundation, New York; The American Home Economics Association, New York; the American Social Hygiene Association, New York; the American Social Hygiene Association, New York; The National Association for the Advancement of Coloured

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on the part of those who are assumed to know. As well said in an editorial in the New York Sun (July 30, 1916) under the title of "A Panic in the Name of Sanitation", "We believe the authorities and particularly the Department of Health have contributed unnecessary hardships to the situation that exists and that if it does not make a radical change in its methods it will create in the name of sanitation a panic whose effects will be more terrible than anything the city has to fear from the mysterious disease to which attention is now given". Much the same criticism may be brought against the publicity mismanagement of the epidemic of influenza in the city of San Francisco, where a well-known writer on public health questions, with no thorough knowledge or understanding of the problem, urged in the most emphatic terms the universal use of the face mask on the one hand and of a but recently discovered vaccine on the other. Impartial investigations subsequently proved that the relative case rate and fatality have been lower in Los Angeles where the face mask was not adopted, and that in the opinion of the foremost authorities on vaccine treatment no safe reliance can be placed upon the use of any influenza vaccine known at the present time for either preventive or curative purposes.

People, New York; The National Board of the Young Women's Christian Association, New York; The National Child Labour Committee, New York; The National Child Welfare Association, New York; The National Committee on Mental Hygiene, New York; The National Committee for the Control of Blindness, New York; The National Conference for Social Work, Chicago; The National Organization for Public Health Nursing, New York; The Playground and Recreation Association of America, New York; The Race Betterment Foundation, Battle Creek; The Red Cross Institute for Crippled and Disabled Men, New York; The Russell Sage Foundation, New York; The International Young Men's Christian Association, New York; The Association of Industrial Physicians and Surgeons, Boston; the American Posture League, New York, and The American Physical Education Association, Springfield, Mass.

There are, of course, a number of others, working, however, chiefly in a more restricted field. Regardless of the viewpoint that there is much duplication of effort, the fact requires to be kept in mind that in what is practically a new branch of social work the strong initiative and the fixed purpose which lie back of each and all of these organizations are factors of the utmost importance in the attainment of early results of far-reaching value.*

Military and Naval Hygiene

No extended reference to the self-evident co-operation of the Federal health service with the sanitary and medical departments of the Army and the Navy, as well as with the health authorities of our non-contiguous or insular possessions, seems necessary. It is a self-evident conclusion, of course, that such co-operation in the future should not only be more active, but should follow much more carefully considered lines, based upon our war experience, than has heretofore been the case. Whether it would be necessary to make special provision for such co-operation in a separate section is debatable. Any particular question arising could probably be taken care of by the section on health administration and organization, which should be made to serve all of the more or less general administrative and co-operative functions.

*For a full discussion of the question of effective co-operation in line with the future possibilities of reorganized public health activities, see a paper on "The Present Condition of Public Health Organizations in the United States", by Prof. Selskar Gunn, American Medical Association, Chicago.

To be Continued.

Social Background

The Child of the Unmarried Mother

Rev. P. J. Bench,
Superintendent Catholic Charities, Toronto

THE subject assigned me for this afternoon, viz., "The Child of the Unmarried Mother" is so large, so many sided and so complex in its various ramifications that we must of necessity restrict ourselves to certain phases only of the world-old and world-wide problem.

In our study of this great problem we must not be guided by feelings of sympathy alone, but we must give careful thought and due consideration not only to the obligations but also to the inherent rights of all parties immediately concerned. We must also keep clearly before our minds the fact that the problem is not merely economic but that great moral issues are also involved.

I shall not delay to discuss local problems, nor those that relate to the war, to the relative merits of institutional life and private family life, nor to the placement of this type of child.

Each one of these topics is of sufficient importance in itself to form a fruitful course of study. I shall merely state in passing that it is well nigh impossible to find a sphere of human effort that has broadened out so widely as that pertaining to the welfare of the child. The child is now the object of solicitude on the part of the nation and the state. The more progressive and high minded portions of the community are bestirring themselves to watch over the child and to see that he receives all the attention and care to which he is entitled.

It is the consensus of opinion of those who have most studied the subject of child welfare that organized effort should tend in the direction of procuring for every dependent child the natural environment of children under normal conditions, namely, family life in the home.

It may be regarded as the generally accepted belief that "the natural environment of the child is the home" where the child's character and aptitudes are most favourably developed. It must be admitted that all things being equal the mother is the natural guardian of her offspring. There is a God-implanted influence exerted by every good mother on her child and there is not an institution anywhere, no matter how well equipped and governed, that can supply the necessary individual care and love so naturally and spontaneously given by the mother. I make this statement without the slightest intention of disparaging or

discrediting the excellent work being done by those in charge of our child-caring institutions. I am too familiar with institutional work to have any but words of the highest praise for those who spend themselves in that noble effort and I know that the best institutional workers agree that the natural place for the child is in the family home and that the institution, at least, should be but a temporary shelter to house and care for the child until family life can be established for him.

We shall now consider the "Child of the Unmarried Mother" from the viewpoint of his legal status in this Province, and consider reforms by way of legislation, which I believe would work in the best interests of the child and open for him the door of opportunity.

The Child's Legal Status

So far as I have been able to discover the only legal right an illegitimate child has in the Province of Ontario is the right to life.

(1) Our laws deprive the illegitimate child of practically all family rights. So far as our law is concerned the child of an unmarried mother is a *filius nullius*, that is, a child of no one.

(2) The father at common law is under no legal obligations to support the child. This legal fable, however, is modified to some extent by Provincial Statute, which provides, "that any person who furnishes food or other necessaries to any such child, may maintain an action for the value against the father of the child. No action of this kind shall be sustained unless it is shown upon the trial, that within six months after birth of the child, the mother had voluntarily made an affidavit before a Justice of the Peace for the District where she resides declaring that the person afterwards charged in the action is the father of the child and the affidavit must be deposited with the Clerk of the Peace within the time above mentioned."

This means that anyone, including the mother, may bring the action and the action may be brought in the proper Court. That is to say, if the amount claimed is under $100 it will be in the Division Court, and if the amount be over $100 it will be in the County Court.

I may state that my experience in hailing putative fathers to Court and the financial results obtained have not been such as to cause me to place any great value on the above Statute.

(3) The child has no legal right to the father's name and has no legal right to the mother's name. Such a child has no name, except that acquired by repute or where there is a baptismal name, including a surname, it will be regarded as the correct name.

(4) There is no legal obligation on the mother to support the child, although in England she is required to do so until the child reaches the age of sixteen years. There is no such provisions in this Province.

(5) The child cannot inherit either from its mother nor from its father. The only way it can receive property is through a will or a conveyance or a gift. It does not inherit as a child. An adopted child cannot inherit from its foster parents unless provided for in a will.

(6) A child born out of matrimony is not legitimatized by subsequent marriage of its parents.

(7) The mother is entitled to the custody of the child.

The Present Law Very Unfair

The child's only effective claim is in the mother whose own need is often equally as great. The law is so constituted as to render the man practically irresponsible while placing the whole burden on the mother. This disproportion is clearly unjust to the mother who is thereby required to bear the full consequences of a sin in which another shared. Still greater injustice is done to the child, who is mercilessly penalized for the sin of the parents.

Proposed Reforms

Under this heading we shall, first, examine briefly the new Norway law and the recent legislation of the state of Illinois.

The new Norway law gives to the child its natural rights to two parents. Minister Castberg, its author, says: "The essence of the law is to wipe out completely from the statute book an outrageous and unnatural fiction." Castberg denounced the legal fable that the child of an unmarried mother is a *filius nullius*, or a child of no one, and bases his law on the simple law of nature, that every child has two parents. It endeavours to establish the paternity of the child in all cases and compels the natural father to assume the same responsibility towards his offspring as does the legal father. The law further states that the child is entitled to its father's name and grants the right to maintenance and education and to inherit exactly as a legitimate child would inherit, not only from the father but from the father's relations.

Judge Fisher, of Chicago, thus comments on the Castberg law: "A careful reading would lead one to believe that the women of Norway were largely responsible for its enactment and that they have righted their wrong with a vengeance. Having carried the burden for many centuries they now seem to have thrown it completely on the other sex."

The Illinois legislation is based on the same general principles as the law of Norway, but leaves it to the discretion of the court to say whether or not the child shall have its father's name and which of the parents shall have the custody of the child provided the father desires to have it.

The bill likewise provides that a decree must issue against the father during his life time, thus avoiding spurious claims against his estate after death. At the request of the mother, or at the direction of the court, the State's Attorney will take charge of the proceedings without cost to the mother."

What We Need in Ontario

I maintain that it is high time we had a law on our Statute book concerning the child of the unmarried mother, the guiding through of which would be the welfare of the child, by compelling the father to bear his full share of the burden and responsibility of caring for and supporting the child born out of wedlock, that the door of opportunity may not be slammed in its face, that the finger of scorn may not be pointed in its direction and that it may not be publicly and forever branded with the stigma of illegitimacy.

The Provincial Board of Health.

IT will be observed in the comparative table of cases and deaths from communicable diseases reported for the month of April shows a decrease of 2,740 cases and 888 deaths compared with the previous month. The reduction is chiefly in Influenza, Pneumonia, Small-pox and Scarlet fever.

Scarlet fever and diphtheria, which have been prevalent in some localities for some months, show a reduction compared with the month of March of 73 cases and 17 deaths in the former and 33 cases in the latter.

The epidemic of measles still continues in many municipalities in the Province and caused more than twice as many deaths as scarlet fever.

CASES AND DEATHS FROM COMMUNICABLE DISEASES REPORTED BY LOCAL BOARDS OF HEALTH FOR THE MONTH OF APRIL, 1920

	April, 1920		March, 1920		April, 1919	
Diseases	*Cases*	*Deaths*	*Cases*	*Deaths*	*Cases*	*Deaths*
Smallpox	305	4	446	7	32	0
Scarlet Fever	487	12	560	29	330	7
Diphtheria	418	58	451	56	204	30
Measles	1,618	27	1,256	23	53	2
Whooping cough	135	17	136	31	48	3
Typhoid	33	14	27	7	10	3
Tuberculosis	223	193	213	173	191	152
Infantile Paralysis	...	...	...	...	...	...
Cerebro-Spinal Meningitis	7	5	1	1	12	12
Influenza	177	111	3,053	502	...	137
Influenzal Pneumonia	...	31	...	232	...	...
Acute Primary Pneumonia	...	302	...	602	...	341
Typhus Fever	...	1	...	...	...	...
	3,403	775	6,143	1,663	880	687

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH

	1920	1919
	Cases	*Cases*
Syphilis	93	110
Gonorrhoea	137	139
Chancroid	7	3
	237	252

DIPHTHERIA

	Cases	*Deaths*
Toronto	164	17
Hamilton	23	3
Ottawa	31	3
Belleville	19	2
Kingston	15	2
London	12	0
St. Catharines	8	1
Brantford	5	1

News Items

The first meeting of the Advisory and Consultative Council of the Canadian Red Cross Society was held at the Headquarters of the Society, 410 Sherbourne Street, Toronto, on May 12th and 13th. The following official and voluntary Public Health Agencies were represented: Department of Health, Canada, by the Deputy Minister, Dr. J. A. Amyot; Provincial Board of Health of Ontario, by the Chief Health Officer, Dr. J. W. S. McCullough; Provincial Board of Helath of British Cloumbia, by Dr. H. E. Young; Provincial Health Department of Nova Scotia, by Dr. W. H. Hattie; Superior Board of Health of Quebec, by Hon. Dr. Henri Beland; Department of Health of New Brunswick, by Dr. G. G. Melvin.

The Canadian Red Cross Society Central Executive was represented by Dr. J. W. Robertson (who also acted as Chairman of the meeting); General G. Sterling Ryerson and Mrs. H. P. Plumptre, Honorary Secretary of the Society. The Ontario Provincial Council of the Society was represented by Dr. G. G. Nasmith, the British Columbia Branch by Mrs. Harold Fleming; the Alberta Branch by Mr. R. B. Bennett, K.C.; the Saskatchewan Branch by Commissioner Perry; New Brunswick Branch by Mr. Hays, Nova Scotia Branch by Dr. W. H. Hattie.

Other health promoting agencies were: The Canadian National Council for Combating Venereal Diseases, represented by Dr. J. G. Fitzgerald (who also acted as Secretary of the meeting) and Dr. Gordon Bates; The Canadian Association for the Prevention of Tuberculosis by the Hon. Senator Schaffner and Dr. George D. Porter; The Canadian National Committee for Mental Hygiene by Dr. C. M. Hincks; The Victorian Order of Nurses by Mrs. Hanington; The Canadian Public Health Association by Dr. Geo. E. Smith and Miss Mary Power; The Canadian Association for Nursing Education by Miss E. G. Flaws; The Canadian National Association of Trained Nurses by Miss J. Gunn; The St. John Ambulance Association by Colonel Irwin and Dr. C. A. Hodgetts; The St. John Ambulance Brigade by Colonel Noel Marshall.

The full proceedings of this most important Conference, which had for its purpose the complete co-ordination of the activities of all official and voluntary Public Health Agencies will be published in an early number of the PUBLIC HEALTH JOURNAL.

Mr. George A. Hastings, Mental Hygiene Expert of the New York Charity Organization Society was a recent visitor in Toronto.

During his stay Mr. Hastings attended the Red Cross Conference, addressed the meeting of the Ontario Provincial Association for the Care of the Feeble-minded and spoke at the Graduation Exercises of The Department of Social Service of the University of Toronto. A dinner was given in his honour by Mrs. A. M. Huestis, Hon. President of the Ontario Feeble-Minded Association on the evening of May 14th.

Dr. George D. Porter, General Secretary of The Canadian Association for the Prevention of Tuberculosis, addressed eleven meetings in the City of Quebec during the week of May 17th.

A meeting of the Dominion Council of Health, the Advisory Body to the Department of Health, Canada, was held in the Board Room of the Department in Ottawa on May 17th, 18th and 19th.

Dr. Helen MacMurchy has been appointed Chief of the Division of Child Welfare of the Department of Health, Canada.

Dr. A. Grant Fleming, M.C., has been appointed Chief of the Division of Venereal Diseases of the Department of Health, Canada.

Dr. J. G. Fitzgerald, Professor of Hygiene and Preventive Medicine, and Director of the Connaught Antitoxin Laboratories, University of Toronto, has been appointed Honorary Advisor in Public Health to the Canadian Red Cross Society. Dr. Fitzgerald will act in a voluntary capacity and for a period to extend over the next four or five months.

The Annual Meeting of the Provincial Association for the Care of the Feeble-Minded was held in Toronto on May 13th. Mrs. A. M. Huestis presided at the meeting and Dr. O. C. J. Withrow acted as Secretary.

An important meeting of the Executive Council of the Canadian Public Health Association was held in Toronto on May 14th. Those in attendance were: President, Dr. H. E. Young, Victoria; Dr. W. H. Hattie, Halifax; Dr. G. G. Melvin, St. John; Dr. C. A. Hodgetts, Ontario; Dr. M. R. Bow, Regina; Dr. J. W. S. McCullough, Dr. C. J. Hastings, Dr. R. D. Defries, Mrs. A. M. Huestis, Dr. Gordon Bates, Dr. J. G. Fitzgerald and Dr. Geo. D. Porter, Toronto.

A meeting of the Executive of the Canadian National Council for Combating Venereal Diseases was held at the Head Office of the Association, 154 Bay Street, Toronto, on May 20th.

Dr. H. C. Cruikshank has been recommended by the Medical Officer of Health, Dr. C. J. Hastings, for the position of Director of Laboratories, Department of Health, Toronto, in succession to Dr. A. Grant Fleming. Dr. Cruikshank has, for some time, been Bacteriologist in the Research Division, Connaught Antitoxin Laboratories, University of Toronto.

The Congress to be held in Vancouver commencing June 21st seems likely to be one of the most interesting Public Health and Medical gatherings of recent years. The attendance promises to be very large, and most excellent programmes have been arranged for.

The organization meeting of the Saskatchewan Committee of the Canadian National Council for Combating Venereal Diseases was held in the City Council Chamber, Regina, on Friday, April 30th. Sir Richard Lake presided and Rev. Hugh Dobson, Provincial Chairman of the National Council and Dr. M. M. Seymour, Health Commissioner for the Province, addressed the meeting on the plans of the Government for attacking the Venereal Disease problem. A constitution was adopted and an Executive Committee was appointed consisting of the following members:

Dr. Turnbull, Dr. Corbett, Chief of Police Bruton, Nurse Armstrong, Alderman Borlase, Rev. Fr. Gillies, Rev. W. Western, Rev. H. Dobson, Dr. Robb, of Regina; Dr. MacNeil, North Battleford; Chief of Police Johnston, Moose Jaw; Mrs. Graham, Moose Jaw; Mrs. Myers, Saskatoon; C. M. Johnson, Saskatoon, and Dr. T. A. Patrick, of Yorkton.

Editorials

THE CAMPAIGN FOR MEMBERSHIP

The campaign for new members in the Canadian Public Health Association is meeting with great success, and returns indicate that the objective of one thousand will be reached before June 30th, the date set for the end of the campaign.

Towards Ontario's objective of three hundred there are already one hundred and fifty new members. Quebec reports that its quota will be exceeded by over fifty per cent. Nova Scotia has reached thirty-five per cent. of its objective and British Columbia sends word that its quota will be exceeded by fifty per cent. Prince Edward Island is the banner Province in the Campaign. Summerside P.E.I. holds the unique position of having enrolled the entire Provincial quota of new members. Reports from other parts of the Province indicate that the total enrollment will be a record. In Ontario through the efforts of a committee of the District Officers of Health no less than seventy-five per cent. of the Health Officers attending the recent convention of the Ontario Health Officers became members of the Association.

The results tabulated above are admirable, and show the unity of purpose of our Canadian Health Workers. Rapid advances in Public Health must depend on the enlisting of wide-spread sympathy for Public Health Ideals and every new member will make the Association and its JOURNAL stronger. Wide-spread membership will mean that information on Public Health matters essential to advance in the physical and mental status of the average citizen will be widely disseminated. This must have its influence on public opinion and wisely formed public opinion is our greatest asset. The PUBLIC HEALTH JOURNAL urges each of its readers to do his or her part in procuring new members. The campaign is on. Do it now.

CHILD WELFARE SECTION

PLANS under consideration by the Child Welfare Section of the Canadian Public Health Association would indicate that the Section will soon develop into a most important factor in the Association's work. A recent grant of five thousand dollars by the Canadian Red Cross has made it possible to commence organization. Offices

have been procured. Miss E. M. Forsythe who is well qualified for the work has been appointed National Secretary and a campaign confined to scientific publicity will be undertaken at once.

It is understood that the co-operation of well-known leaders in this field of preventive medicine will be enlisted in the preparation of press material, posters, moving-pictures, etc., and that money will be raised to cover a budget of about fifteen thousand dollars for the first year's work.

Public Health leaders throughout the country will welcome this news. Opportunities for voluntary organizations to undertake leadership in various phases of public health work are increasingly great. In this particular field it is high time that intensive work should commence. That it will commence is assured. That whatever is done will be well done is also assured, by the fact that the work has been commenced under correct auspices by men and women who are themselves authorities.

The Public Health Journal

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A Decade of Public Health Progress

By J. W. S. McCullough, M.D., D.P.H.

Read at the meeting of the Essex County Medical Society, Windsor, June 10th, 1920.

Mr. Chairman and Gentlemen:

I thought it might be of interest to the members of the Society to whom I am indebted for the opportunity to outline briefly the advances made in public health work in this Province in the last ten years. There is nothing remarkable about it, but that there has been any advance, considering that during half of that period we were engaged in the Great War when most of our efforts and resources were bent to the one object, is in itself encouraging, and lends the hope that the next decade may see a vast improvement. The Board had in mind at the beginning of the decade a few principal objects. One was the consolidation of the Public Health Laws, another was to assist in lessening the scourge of tuberculosis, still another to spread educational information in disease prevention and to improve our methods of administration.

The Health Act was consolidated in 1912, and with a view of assisting the local health authorities, and particularly the medical officers of health, a number of District Officers were appointed, of whom one has charge of the six counties lying in the western peninsula. It was not found possible to secure the appointment of county medical officers of health, no matter how desirable such a course would have been, but we were able to secure some degree of permanency to the local medical officer of health by curtailing the pernicious practice of having that official changed every year, which practice had become general all over the province. In addition, the Board has been able to secure an amendment whereby the medical officer, heretofore paid a mere pittance, may appeal to the County Judge for an adjustment of his salary in case the municipal council refuses to pay him a reasonable salary, as the law directs. The result of this has been that the larger number of these

officers are now paid fair salaries. Full-time men in the larger cities are very fairly remunerated, and each year there are fewer salary disputes and fewer instances of efforts seeking the dismissal of the medical officer of health.

Tuberculosis.—The campaign against tuberculosis has received much assistance from voluntary societies and from the efforts of the Canadian Society for the Prevention of Tuberculosis, largely through the educational work done by Dr. George D. Porter, its indefatigable secretary. The number of Sanitoria in Ontario has grown from 10 in 1910 to 25 in the present year. The Government now provides an amount up to $4,000 towards the cost of building a sanitorium and donates the sum of $3.50 weekly towards the cost of each patient. As a result of this policy the annual grants for maintenance have increased year by year from $26,073 in 1910 to $279,491.22 in 1919. The accommodation for patients in sanitoria in Ontario is now, including several Preventoria for pretuberculous children, about 2,000 as compared with 615 ten years ago. During that period the Government has given in addition towards the establishment of these institutions the sum of $32,000. While this much has been done the continued incidence of tuberculosis, particularly in the returned soldier, requires that our efforts must be greatly increased. There are a few diseases, and consumption is one of them, in the prevention of which the Dominion Government should give assistance to the provinces. Practically all the cost of the effort in tuberculosis, with the exception of an annual grant of $10,000 to the Canadian Association for the Prevention of Tuberculosis from the Dominion, has been borne by the provinces. The prevention of tuberculosis is a national question which can only be solved by the earnest support of the entire country.

Educational Propaganda.—This has been one of the greatest of the Board's activities. Pamphlets and leaflets to the hundreds of thousands upon all topics relating to public health have been circulated through the medium of local medical officers of health, the schools, various societies and in connection with exhibits. For some years a Public Health and Moving Picture Exhibit has been shown all over Ontario. Our only regret has been that the funds for this purpose have been too meagre. Improvement is at hand, however, and this year we have for exhibit purposes the sum of $9,000.

Distribution of Biological Products.—The great annual loss of life from diphtheria, tetanus and typhoid fever, together with the high prices incident to the purchase of diphtheria antitoxin, induced the Board a few years ago to endeavour to secure for medical practitioners and the public some means whereby these products might be distributed

at lessened cost. Tenders for supplies of diphtheria antitoxin were invited and the lowest tender was secured from the Antitoxin Laboratory of the University of Toronto, so that in 1914 we were able to supply the Boards of Health with diphtheria antitoxin at about one-third the commercial prices then prevailing. This effort was so much appreciated that the Board decided two years later to furnish biological products such as diphtheria antitoxin, tetanus antitoxin, typhoid pertussis and smallpox vaccines, antimeningitis serum, preventive treatment of rabies and for babies' sore eyes (gonorrhoeal ophthalmia) entirely free to physicians, Boards of Health, and the public generally, and this plan continues at the present time. We have a system in Ontario which in its inception at least was unique. The Board receives and keeps account of all orders received. These are passed to the Connaught Laboratory in connection with the University of Toronto, and by the Laboratory promptly mailed or expressed to the person who sends the order. Typhoid, pertussis and influenza or combined vaccines go directly from our own Laboratory. Not only is the system a satisfactory one, but the prices paid by the Board for these products is far below that of any other state or province on this continent and probably lower than in any other country in the world. During the war the Board's Laboratory in Toronto supplied almost the entire quantity of typhoid and paratyphoid vaccine used by the Canadian Army. Not only did we do this, but we supplied these vaccines free of cost, a cost which would otherwise have meant a quarter of a million of dollars to the Department of Militia and Defence.

LABORATORIES.—In order to afford opportunity for ready and adequate free diagnosis for the medical profession in the communicable diseases and to provide for analysis of water, milk and other foods, the Board began the establishment of Laboratories some years ago. In 1910 we had two of such laboratories and by the end of a couple of months these will be increased to seven, three of which are in New Ontario, at Fort William, North Bay and the Soo, and four in Old Ontario. The main Toronto Laboratory carries on the preparation of certain vaccines, such as pertussis and typhoid and paratyphoid and has recently begun the preparation of an arsenical product to be called Phenarsenamine for the treatment of syphilis. This remedy will be supplied free to our clinics, to hospitals and boards of health.

The Board has reason to believe that the service rendered by our Laboratories and in the distribution of biological products has the appreciation of the profession. If at any time there seems to be any slackness of service the Board will be glad to hear about it promptly, as our object is to make these services of real value and to have them constantly up to the mark.

In 1912 we established a Division of Sanitary Engineering which has accomplished a great deal in securing purer water supplies for many of our urban communities. Reference might be made to the extensive work done by the Board in the survey of international waters and in securing new and improved sewerage works. Every year we employ during the spring, summer and autumn seasons a corps of young engineers who are engaged in making surveys of various parts of the province with the object of improving the water supplies and sewerage facilities. The Board has extensive powers in respect to these utilities. All plans and specifications of water and sewerage works are required to be approved by the Board before they are begun, and where municipalities neglect the construction of works and improvements which in the Board's opinion are necessary in the interest of public health, they may be compelled, under the Board's order, to begin and carry such works to completion. Sometimes there is a good deal of opposition but the Board never proceeds with drastic measures until the matter has been carefully and fully considered and until the facts completely justify such action. The results of a firm policy in respect to water supplies may be observed in the fact that the typhoid death rates for the cities of Ontario are 4.3 per 100,000, and of the rural communities, 4.5 per 100,000, average 5.2, rates which are far below those of any other of the provinces or of the United States. The U.S. varies from 12.4 in 1915 to 12.9 in 1918, an average of about 13. Quebec in 1917, 29.1.

Venereal Diseases.—The discovery of the exact cause of syphilis, the publicity given to venereal diseases by the British Royal Commission and the increased knowledge of the prevalence of these affections gained by the experience with army enlistments and conscription and experience with newer methods of treatment have led in recent years to much greater attention being given to these diseases. More than three years ago our Chief Chemist worked out the process of manufacture of the remedy known as Salvarsan and became conversant with its process of manufacture. The Board was confronted with a condition in respect to this preparation very similar to that which formerly prevailed in regard to diphtheria antitoxin. Licenses under the German patent had at the outset of the war passed to commercial firms operating in Canada, and it was only with the greatest difficulty and after two years of persistent effort that the Board was able to secure the right to produce the arsenical product which we call Phenarsenamine, and which is about ready for distribution. We propose to attack the venereal problem much along the lines pursued in England, namely, by providing as rapidly as possible, free and adequate treatment for syphilis and gonorrhoea. In carrying out our programme one difficulty we meet is in forming any sort of satisfactory estimate of the prevalence of these

diseases. Well-known authorities on this continent and overseas give widely different estimates of the number of cases prevailing. We can only obtain any definite estimate by the assistance of the medical profession, therefore an appeal is made to physicians to report all cases. The Board thinks it may fairly claim the co-operation of physicians for support for the reason that, consistent with the public interest, the Board has not at any time been unmindful of the interest of the profession and has endeavoured, not, we think, without a measure of success, in affording some assistance to the profession. So we appeal to Medical Societies such as yours and to you individually as medical practitioners to lend us your aid in seeking to control what is generally regarded by medical authorities as one of the most serious pair of diseases with which the human family has to contend.

In our plan of dealing with venereal diseases we are establishing clinics in the larger cities. There are six such clinics in operation in Toronto, one each in Kingston, London, and Hamilton, and very shortly others will have been inaugurated in Fort William, Ottawa, Brantford, the Soo, and last but not least it is expected shortly to hand a cheque of $2,000 to the clinic in Windsor. In the succeeding years $500 will be set aside towards the payment of a social worker and $500 towards the honorarium for the specialist in charge. For each treatment at the clinic the Board will provide 50 cents and if the patients enter hospital an additional 25 cents a day will be paid. Valuable educational work will be carried on by the Venereal Diseases Division of the Board and by the National Council for combating Venereal Disease.

For this work the Board has been able to secure a grant of upwards of $57,000 from the Federal Government and an additional grant from the Ontario Government places at our disposal the sum of $115,000 annually for the purpose of handling this question.

Industrial Hygiene.—The importance of Ontario as the home of extensive manufacturing concerns, our large lumbering and mining industries and the necessity for the conservation of man-power to its full extent make the supervision of the health of the worker of vital consequence. With this in view we have this year made a beginning in the study of industrial hygiene. The division we hope to make a centre of information for the employer of labour, whom we may assist in solving his problems regarding the health of his employees, in the prevention of accidents, and the consequence of longer or shorter hours of labour. For the labouring man our investigations and knowledge will, we hope, assist in eventually securing for him a fair deal. Every worker should, before beginning any dangerous, unhealthy or sedentary trade, have a physical examination to determine whether or not he is physically fitted for the work. This is true especially of young boys and

girls. In this way many cases of incipient tuberculosis, contagious cases of syphilis and other affections might be discovered and preventive methods employed. The University of Toronto and the other Universities of Canada are co-operating in this valuable branch, and it is confidently hoped that our small beginning may be productive of widespread and valuable effects.

MATERNAL AND CHILD WELFARE.—By far the most valuable asset of any country, particularly of a young country like ours, is the conservation of its native born children. Yet it is a curious fact that up to the present time, while the government of Canada has for years had a department, the business of which was to look after the calves, the lambs and the colts, it has given not one cent for the protection of the babies of the country. You cannot have a healthy baby without healthy parents, and of the two parents the more important is the mother. Mothers without number have lost their lives as every doctor knows because certain conditions in their pregnancy were not appreciated and they failed to secure treatment. Many a woman has headache, a puffy face or swollen ankles or occasional vomiting during pregnancy which, if called to the attention of her doctor, would have received treatment which would in nine cases out of ten saved her from convulsions and the death of herself, her baby or both. There should be the most skilful medical assistance and clean lying-in facilities, for many women die of puerperal fever. It is a disgrace to our intelligence as physicians that they should die of such a malady. In 1882 Duclaux, the great pupil of Pasteur, lost his wife from this affection. He wrote a book on "Ferments and Maladies", which he dedicated to his wife in the following words, "To you, innocent victim of the infinitely little, I dedicate this book in which I have attempted to popularize their history. May it, slight as it is, serve to hasten a little the day wherein the accomplishment of her sacred mission will no longer cause the wife to fail her husband, and the mother the new-born child." The mother must be supervised during pregnancy. The records of the Burnside Lying-in-hospital in Toronto will illustrate the value of supervision.

RECORD OF OBSTETRIC CASES, BURNSIDE LYING-IN-HOSPITAL, TORONTO, FOR THE LAST TWO YEARS.

	Semi-private cases	Public ward non-supervised cases	Public ward cases supervised by clinic
No. of cases	1198	505	461
Deaths of the mother	10 (0.8%)	18 (3.5%)	2 (0.4%)
Still-births	45 (4%)	40 (7.9%)	6 (1.3%)
Eclampsia (Convulsions)	20 (1.6%)	16 (3%)	2 (0.4%)

Patients are required to come to the clinic every two weeks. Regularity counts.

The physician-in-charge says, "The most important factor in this work is the Public Health Nurse."

In Ontario, out of some 64,729 babies born every year upwards of 6,000 of them die in the first year of life and of these the larger proportion die in the earlier months. Too many mothers die as well, and the chief reasons in both cases are want of supervision, want of suitable mothering, and neglect of breast-feeding. The experience of such countries as New Zealand, Australia, Norway, Sweden and Denmark, shows that much of the maternal loss of life and at least one-half of the infant mortality may be prevented. We propose to do more than we have been doing in respect to these two important matters. At the last session of the legislature the sum of $40,000 was voted to establish a Maternal and Child Welfare Division and the Board is now actively engaged in securing trained nurses to carry on this work. A director, assistant director and supervisor of nurses have been secured. We intend to proceed as follows, much along the line which has been so successful in New Zealand, where work of this character has been in operation for many years. The nurses will be given a preliminary course of training in the hospitals and pre-natal and baby clinics in operation in Toronto. When their training is complete they will be sent, one to each of the eight health districts of the province. Their business will be to interest the local newspaper man, the clergy, physicians, teachers and influential members of the place in forming a Community Health Centre. Mothers from the adjoining rural neighbourhood will be encouraged to come to the meetings. For a month or longer the District Nurse will carry on her course of instruction and the Community Centre will be encouraged to establish a nurse to do similar and other public health work when our nurses move on to another locality. The District Nurse will have a small car to enable her to get about the country. Her work will be reinforced by a small and inexpensive exhibit, lantern slides, etc., and in addition we shall have a motor travelling exhibit and clinic manned by a doctor who will be a specialist in children's affections. To this clinic the mothers will be encouraged to bring their babies so that they may be examined as to their physical and mental and other conditions and defects, if any, will be pointed out. This work will not in any way interfere with the physicians. We expect to be the ally of the local physicians and instead of treating cases, which is not our intention, those requiring attention will be referred to the family doctor. If the local community centre is unable entirely to finance the project of a visiting nurse it is hoped that our funds will permit of giving financial assistance in such places as seem to require it. The Board has no fear of failure of such a

plan. It is felt that its value will be so rapidly demonstrated that the demand for visiting nurses will come from all over Ontario, and instead of our having to urge the need of further appropriations upon the government that the public will do this for us and that the members of the legislature will soon recognize that the greatest wealth of a country rests not altogether in its well-kept farms and great industries, but upon a healthy, sturdy and vigorous growing race of children. Florence Nightingale, the progenitor of the modern nurses has said: "If the babies of England were kept well and clean for the first two years of their lives that would be the greatest asset of England."

The Board looks for the co-operation of the public in this the greatest of all features of public health. It appeals with confidence to the well-trained medical profession of Ontario to back our efforts which, if successful, will remove the appalling rate of infant mortality, afford an opportunity to preserve the lives of the mothers and make our people the healthiest, happiest and best of the poeples of the great British Empire.

Finally, as an index of the advance in preventive medicine in Ontario during the last ten years, let me point out the fact that in 1910 the appropriations for public health under the Board were about $50,000, while for the present year these appropriations exceed those of all the other provinces of Canada put together and total a sum of $530,000.

The Modern Treatment of Syphilis

By Emmerson J. Trow

Read at the Annual Meeting of the Ontario Health Officers Association, Toronto, May 26th, 1920.

THE successful management and treatment of such a common, widespread and serious infection as syphilis is known to be, brings one face to face with numerous public health and social problems, as well as the actual medical care of the case.

The physician of to-day, on making a diagnosis of syphilis, must inquire of the patient the probable source of the infection, and, if such source be discovered he is only doing his duty by insisting on the prompt examination and treatment of this carrier. This he is able to do under the "Venereal Disease Prevention Act." The physician must ask himself two questions:—

(*a*) How can I prevent the infection of others?

(*b*) How can I best rid this patient of his infection?

The answer to the first question is found in educating his patient as to the serious nature of the disease, both to himself and others which he might expose, its infectiveness, and the necessity of a prolonged course of treatment to rid himself of it. Many of your patients accept this responsibility readily, and are quite willing to co-operate with you, but unfortunately some are irresponsible and these must be forced to accept treatment in spite of themselves. It is this latter class of irresponsibles which one finds in all stations of life, and includes that large feeble-minded, unmoral, and vicious element which we have in our midst. In this class we must place the prostitute, both professional and clandestine. I am not very hopeful personally, that many of these people are to any degree influenced by educational and reform movements, and therefore it becomes the duty of the physician to force treatment up to the point where they are no longer a menace to others. I am certain that a short isolation in hospital for these cases is useful during the period of active open infectious lesions, not only because there treatment can be pushed to the limit, but also certain educational facts can be slowly drummed into them which may be of benefit.

On the physician falls the responsibility of prevention of infection which he can do by urging continence in the unmarried, not only as a sure means by preventing venereal disease, but also that it is best for the individual and the race. In the case of men who, in spite of advice,

expose themselves, I believe it to be the duty of medical men to employ the well-known forms of prophylactic treatments as soon as possible

The physician should also report regularly cases of syphilis coming under his notice to the proper authorities, as is laid down in our present laws, and where patients are wilfully or innocently spreading the disease to others, a report should be sent in.

Case Sheets.—The proper care of a syphilitic requires the keeping of careful case sheets, as the memory cannot be trusted in such a prolonged course of treatment as is often necessary.

Early Diagnosis.

Any one who has treated syphilis realizes the importance of an early diagnosis, and the earlier the better the prospect of cure. It should be the desire of every physician to discover syphilis at its inception if possible, before the development of a positive Wassermann reaction. In order to do this all sores, either venereally situated or otherwise, should be viewed with suspicion. It has been my experience that typical clinical chancres are not so common as our text books would indicate often the lesion is masked by secondary infection. Therefore any papule, crack, herpes, or erosion may be the initial point of entry of the spirochaete. It is a very brave physician who will make an absolute diagnosis of chancroid without first searching for the organism of syphilis repeatedly. Very often a double infection occurs and even after a most careful search the spirochaetes are missed, therefore, patients with apparent chancroidal infection in which the spirochaete has not been found should be carefully watched and always have weekly Wassermann tests for from four to six weeks before a syphilitic infection can be ruled out. In this connection the application of antiseptics, especially mercurials to lesions render the finding of the spirochaete almost impossible. For the first two weeks after the appearance of a chancre the Wassermann test is usually negative.

The best method of demonstrating spirochaete is with the aid of the dark field illumination in a fresh specimen of serum from the lesion. The spirochaete refringens is usually eliminated by careful cleansing of the lesion and by obtaining serum from the deeper parts of the sore; if present it is coarser with fewer turns and does not hold its cork screw shape as well as the spirochaete pallida, and when in motion is much more rapid.

The local treatment of a chancre should be applications of mercurial ointment and if so situated that excision is possible, this may be done though one must remember that this procedure does not abort the disease.

Once the diagnosis is established systematic treatment should be commenced and with both salvarsan and mercury. It is important

that a thorough physical examination of the patient be made, and if diseases of the renal cardio-vascular or hepatic systems be found great care should be employed.

It is now generally accepted that the best time for producing radical results with salvarsan is in the early stages of the disease, and if the case is commenced before the Wassermann becomes positive so much the better. In these negative Wassermann, but positive dark field cases, a course of salvarsan of, say 6 to 8 injections followed by 8 to 10 mercury injections, may suffice to cure, but this is not always safe to assume, and it is advisable after a rest of two months to give the patient another but shorter course, these patients should then be watched for any evidence of the disease for a year, checking up the Wassermann results at monthly intervals.

In early primary syphilis seen after the Wassermann becomes positive the first course of treatment should be followed by a second course in about six weeks, and it is often safe to give a third course, but a shorter one in from two to three months after the second. If by any chance evidence of the disease still remains, further treatment may be indicated. I believe that in even the most favourable cases mercury is necessary. This may be given along with the salvarsan as was done in the army, but I am of the opinion that many of the civilian cases find this too severe, and it is our practise here to give first the intravenous and after the required course is completed to continue with mercury injections. I hope I may be pardoned if I again repeat the importance of accurate early diagnosis and prompt treatment for it has been our experience in the Toronto General Hospital that practically 100% of this type of case is cured, but if the disease is allowed to progress untreated, even a matter of four or five weeks, our percentage of cures rapidly drops and keeps dropping the farther away we get from the initial infection.

Generalized Syphilis.—When the syphilitic infection becomes generalized we have a different condition to deal with which may exhaust all our resources. If we but remember that in this period all the tissues of the body are flooded with organisms, and the foundation is being laid for serious degenerative changes later on in the various organs, more particularly the cardio vascular and nervous systems, one can readily see how important prolonged and careful treatment is for that individual's future, as well as his family. These generalized cases require careful watching and treatment for a long time, and careful examination from time to time of the general physical condition, as well as special examination of urine, nervous system and special organs. It is necessary to give repeated courses of mercury and salvarsan all the while watching the patient's condition, as well as laboratory findings. These too are the cases that should be isolated until all signs of open lesions have disappeared.

Late Syphilis.—This type is often spoken of as any lesion occurring one year after infection. The variety of lesions presented by a syphilitic infection of long standing with its degenerative changes affecting the various systems are legion. In a large syphilitic clinic in the course of a week nearly all phases of medicine and surgery are reviewed. In the treatment and care of late or tertiary syphilis, a thorough physical examination is of the utmost importance, every system being carefully gone over for special points of attack. This is particularly true of the cardio-vascular and nervous systems, but renal, hepatic, and other regions should not be lost sight of. The method of treatment of these cases depends largely on the lesion, and here it is advisable to use Iodides following each course of mercury and salvarsan, and splendid results are often obtained by the prolonged use of the old-fashioned mixed treatment. In latent syphilis, that is asymstomatic syphilis, it is very often that even after repeated and prolonged courses of treatment, the Wassermann reaction still remains positive, but on careful examination the point of attack is discovered in an old aortitis, interstitial glossitis, or some such similar lesion sufficient to call forth Wassermann bodies or, it may be that the nervous system is affected, the only evidence being slight papillary, irregularity or change in knee-jerks which is often overlooked. In these tertiary or latent cases it is often noticed that during or following the different courses of treatment, the wassermann becomes negative only to again become positive, if treatment be discontinued even for a short time. In such instances it seems to mean that certain foci in the various organs or nervous system are present which is capable of reinfecting the blood stream. These cases, therefore, call for special forms of treatment. Up to the present time there is very little evidence that late cases are ever completely cured, but this is no reason for discontinuing treatment, as we know very well that in most instances, treatment if thoroughly carried out will arrest the progress of the disease at least, and further treatment will prolong life, and in many instances act as an insurance against its further activity. Special manifestations of the disease, such as neurosyphilis, require special forms of treatment, but it is not the intention of this paper to enter into this phase of the subject.

We have found the Wassermann test a reliable guide in the treatment, but its results must always be considered in the conjunction, with clinical findings, as we occasionally see clinical lesions of syphilis of a limited type in which we find a negative reaction. It is of special importance too in clearing up obscure conditions referable to the cardio-vascular and nervous systems, or viscera, in which syphilis might play a part. The usefulness of spinal fluid examinations cannot be too strongly urged in indefinite diseases of the nervous system, and I believe

the time has come when a complete examination of the spinal fluid is essential in all cases of syphilis beyond the primary stage, at least before the patient is finally discharged.

Syphilis in Pregnancy.—We are of the opinion that syphilis in a pregnant woman should always have treatment throughout the whole pregnancy. Of course, the patient must be carefully watched and frequent urinalysis made. A great deal depends on the time during pregnancy in which treatment is commenced, and naturally the earlier the better. Our results have been uniformly good in these cases, and live healthy negative Wassermann babies have resulted—even where in more than one instance the mother has been suffering from early generalized syphilis.

Salvarsan.—The method of administering salvarsan or of the various brands is now almost always intravenous and should be given slowly by gravity, the concentration being not greater than .1 gram in 25 to 30 c.c. of sterile freshly distilled water. I am certain that the toxicity increases with the concentration and rapidity of injection. The injections, as a rule, are given at from five to seven day intervals, and this is usually the safest interval. In selected cases, however, a shorter series may be given oftener without untoward results, the theory being to keep the patient for a short period of a few days saturated with the drug. Neo Salvarsan may, of course, be used in 50% larger doses given in concentrated solutions of 10 to 15 c.c. by syringe.

Mercury.—The use of mercury in some form is essential and should be used in conjunction with the intravenous therapy. Mercury by innunction if properly used is very valuable, but most patients cannot be trusted to apply it carefully in order to get its best effects. Injection of mercury is to-day the favourite method if using the soluable preparation, such as Bichloride 1-10 to 1-5 gr. every other day, if insoluable salts are used weekly, injections such as the salicylate or grey oil. The curative action of the soluable preparations is probably less than the insoluble ones, but freedom from the dangers of cumulative effect is avoided. Mercury as well as salvarsan throws a strain on the kidney and frequent examinations of the urine are necessary. The care of the mouth is important and when cases are referred to the dentist it is only right he should be told the condition of the patient. A useful routine mouth wash of half saturated potassum chlorate is often employed.

Iodides.—Iodides of potassium and sodium are very useful in the late lesions of syphilis and should not be forgotten in favour of the newer remedy, salvarsan. Large doses may be given in neurosyphilis such as 1½ to 2 drams three times a day, but in the ordinary case 10 to 30 grains three times a day is sufficient.

Reactions from Salvarsan.—Reactions are divided into two types and vary greatly in severity. The most frequent early reaction is nausea 3 or 4 hours after, sometimes followed by a chill and perhaps vomiting—these symptoms readily disappear in a few hours. Sometimes the reaction is more severe with fairly marked rise in temperature, headache, diarrhoea and an urticarial or toxic rash. An immediate acute reaction is sometimes seen with flushing of the face, a bursting sensation in the head, and general vaso motor disturbances, constriction in the throat and difficulty in breathing, even fainting occurs, but this passes off rapidly, particularly if 20 to 30 minims of 1 in 100 adrenalin solution be given immediately. This type of reaction is most apt to occur if the injections are given rapidly, or the solution is not properly neutralized.

Late Reaction.—Care must be taken that during the courses of treatment the general health is not interfered with, and such symptoms as loss of appetite, lassitude, and loss of weight show that the patient is not receiving the usual benefit of the treatment, and probably it should be stopped and tonics with rest and careful feeding given. A reaction which should be carefully watched for is the appearance of an erythematous eczema of the face and forearms, and is a warning sign that treatment be discontinued, else the case will develop into an acute exfoliating type of dermatitis, probably with nephritis, and complicating conditions such as bronchopneumonia may develop resulting fatally. Jaundice appearing is always a sign of serious intoxication and such cases occasionally show acute yellow atrophy of the liver, and may be fatal. Fortunately these cases are relatively rare. By careful watching of the patient most of these reactions can be avoided, however, and if the general physical condition of the patient is not lost sight of the cases can always be conducted through almost any amount of treatment to a successful conclusion. Treatments should be interrupted at times, as undoubtedly the organisms become tolerant to any one form of treatment given over a long period of time. In a paper such as this it is impossible to cover all phases of the treatment of such a complex disease, and there are many things which have been left out.

In conculsion I might say the treatment should be individual, bringing to your aid all the special tests and examinations, being constantly on the watch for fresh outbreaks of the disease in remote areas, and with an eye on the patient's general condition.

Accident Prevention in the Pulp and Paper Industry

By A. P. Costigane,
Secretary and Engineer, Ontario Pulp & Paper Makers' Safety Assn.

Read at the Annual Meeting of the Ontario Safety League, Toronto, April 13th, 14th, and 15th.

Sixth Annual Convention of Ontario Safety League and First Annual Convention of Canadian National Safety League, April 13th, 14th and 15th, 1920, Toronto

INTRODUCTION:—I have been asked to read a paper on Accident Prevention in the Pulp and Paper industry. This is rather a large order as accident prevention has so many angles that to cover the whole ground would not be possible in the time at my disposal. Furthermore, my first-hand knowledge refers only to the pulp and paper mills in Ontario and I think it would be desirable under the circumstances to confine my remarks to what is being done in these mills.

We have heard a lot about accident prevention during the last few years, and I hope we will hear a lot more very soon. What has led to this interest? Some people think it is an outgrowth of the European war, but this is hardly correct. Long before the war started an uneasy feeling arose in industry and all was not well, internally. Strikes and limitation of output were the order of the day. Strikes are often times justified, but the limitation of output never can, in my opinion, be justified. The uneasy feeling was not confined to employers, the same feeling was beginning to cause thinking employees to ask the question: Why all this distrust and disagreement? This questioning attitude creditable to both sides was fostered by leading articles in the newspapers pointing out the loss to the country as a whole caused by internal strife and emphasizing the benefit to be obtained from mutual trust and a give-and-take policy. About this time Workmen's Compensation came within the realm of practical politics, and the feeling already awakened helped the passage of the Workmen's Compensation Act through the legislature. The passing of this Act was the first real step taken to clear up at least some of the misunderstanding between employer and employee and marked the dawn of a better day in industry. The Act may not be perfect as it stands to-day, but it is an honest effort to deal justly with both employer and employee. Previous to the passing of this Act all claims for compensation for accidents were made under common law and in serious cases the claims were usually opposed by

Insurance Companies who had insured employers' risk. In the event of the Insurance Company being able to prove contributary negligence little or no compensation was awarded the injured party. Besides this being an expensive and uncertain method of procedure the ability to appeal on the part of the Insurance Companies who had funds at their disposal, against the inability of the injured or his dependents to procure funds to cover legal expenses, resulted in many cases of gross injustice. Many just claims for compensation for accidents, sometimes caused by unprotected machinery, never received compensation of any kind on the ground that such hazards were accepted by the employee on entering the services of the company. On the other hand many cases of malingering received compensation through the agency of shyster lawyers whose importunities often forced a payment from employers who would rather pay a species of blackmail than go to court. The Workmen's Compensation Act has done away with all injustices of this nature, and as the Government handles the business itself, insurance companies are eliminated. Under this Act no matter how, when or where an employee is injured while executing the duties of his employment, he is entitled to compensation. You are probably all familiar with the Workmen's Compensation Act so I will not dwell on it furhter than to say that one provision at least appealed strongly to, and was early taken advantage of, by the Pulp and Paper Industry—I refer to the provision whereby the employers in any industry have the right to form themselves into an association and appoint an expert to carry on active accident prevention campaign. Taking a broad view of the situation and after exhaustive study of the experience of other countries, the pulp and paper industry decided that something more than the guarding of machinery was required if the best results were to be obtained. A study of accident statistics showed that not more than 20 to 25% of the accidents were due to unguarded machinery, and the question arose as to how to deal with the other 80%. It was realized that while the employer could take care of accidents due to exposed gears, etc., little or no progress could be made along other lines without the whole-hearted co-operation of the men in the mill. An organization has now been in operation for four years working educationally and has secured the co-operation of a large percentage of employees. The progress made has justified the early conception of the directors of the Association and proved that the efforts of the association were along the right lines.

The first year was devoted to missionary work among the employers and with few exceptions the employers proved readily accessible and not difficult to convince when the full scope of the plan was explained. Missionary work among the men in the mill was also taken up and converts were made almost from the start, in spite of the fact that some

of the younger element treated the whole idea as a huge joke. A few serious accidents made use of as object lessons soon dispelled the joke idea, but some still hung back. By judicious inquiries and conversations with men whose confidence has been secured it became evident that the hanging back was caused by a feeling of distrust. This feeling of distrust, one might call it the residue of former strife, was the most difficult to overcome. One could feel when talking to the men that while they admitted a desire to co-operate they hesitated because they were all the time looking for ulterior motives and wondering what new scheme was being put over them for the benefit of the management. The idea of co-operation between the management and the men was new and it took a long time before the men were really convinced there was nothing in the background which would later be used to their disadvantage.

The question naturally presents itself: What is to be gained by an educational campaign? I will try to answer this question. (1) Reduction in accidents. (2) Reduction in lost time due to injury. (3) Reduction in labour turnover. (4) And most important of all, the establishment of a bond of union and mutual respect between employer and employee.

1. Statistics covering a period of years has conclusively proved that accidents can be reduced by organized efforts. Our experience in the pulp and paper industry of Ontario bears this out, and I think similar results have been shown in mills located in other provinces. I have here a chart classifying all accidents that have taken place in the pulp and paper mills in Ontario during the years 1917, 1918 and 1919. The records for 1917, however, are not quite accurate, as many accidents were not reported, so that for comparison purposes we can only deal with 1918 and 1919. This chart includes all accidents involving lost time of one-half day or more, whether such accidents were compensatable or not. During 1918 each full year worker in the industry lost 2.63 days owing to disability resulting from accident. Last year this figure was reduced to 1.99 days or a reduction of 24.3%. (Mr. Costigane will explain in detail these percentages.)

2. *Reduction in Lost Time due to Injury.*—Anyone who has been responsible for the practical management of a mill or factory will admit from personal experience, that the lost time due to accidents is a factor to be studied and reduced. Where machinery is used a minor accident means that the machine in question stands idle while the operator goes to the first aid room to report and have the injury dressed. This may seem a small item but at the end of the year the time thus lost makes quite a big figure. In the case of a major accident, where a man is incapaciated for some weeks, there is the loss due to training of a temporary man to fill his place. But the greatest loss of all is when an employee

is fatally injured. In such a case there is bound to be almost a complete cessation of work by fellow employees in the immediate vicinity of the victim. A certain number will drop their work to give aid and will remain with the injured man until he is removed to the hospital—sometimes accompanied by one or two of his friends. After removal of the victim there will be further interruption to the work owing to the witnesses of the accident discussing among themselves and with others the details of the cocurrence. Following this, much time and energy is expended officially in investigation, interviewing witnesses, examining conditions, etc., and in the event of an inquest, the attendance of all officials directly or even remotely responsible for the occurrence. A value can be put on all these interruptions and when such figures are compiled the total will be astonishingly high even when the reduction of output is not taken into consideration.

Speaking of losses due to accidents let me tell you of an incident that came under my own observation. Not long ago I met the superintendent of a plant in which a fatal accident took place. In the course of conversation I put the question: What do you consider this accident cost you, irrespective of compensation?" (expecting him to name a sum of a few hundred dollars at the outside). Imagine my astonishment when he said: "About $1,000." Asked to explain he said the accident happened at 9 o'clock in the morning, and owing to the unsettling of the other employees, the output of the plant fell to practically nothing for that day. Two days later the plant shut down for the funeral, all wages being paid by the company as usual. Thus the services of 200 men for practically two whole days was the price this company paid for that one accident. The superintendent did not over-estimate when he placed the figure around $1,000.

3. *Reduction in Labour Turnover.*—Safety organizing really means constructive work for industrial betterment with the main purpose of promoting a sound body, a clear eye and brain, and a clean standard of living. Such a movement aims at preventing men from being injured, it precludes poverty, suffering and destitution in the families, it helps to prevent injury of one employee by another, by carelessness, or thoughtlessness, it emphasizes the necessity of guarding physical hazards, so that employees do not feel that their lives may be snuffed out if they are not constantly on guard to keep away from moving belts, flywheels or open gearing. Employees are intensely human and will seek employment, will remain with and speak well of the Companies offering the best employment conditions and showing the greatest interest in their welfare.

4. *Establishing a Bond of Union and Mutual Respect between Employer and Employee.*—There has never been a movement in the history of

industry that has done so much to bring employer and employee together on a common platform as has the safety movement. The formation of popularly elected committees has been one of the chief influences to bring this about. When representatives of the employees sit in committee with representatives of the management, each learns the viewpoint of the other. The feeling of restraint passes away and questions are discussed freely and openly. Meetings such as these quickly bring each side to realize that the other fellow is not such a bad sort after all.

The means adopted by the Association must of necessity vary as the men employed are not all of the same class. The grades run from technically trained men to day labourers, and sometimes the latter are not even familiar with the language. The following are some of the principal means used to stimulate interest among employees:

1. Safeguarding physical hazards.
2. Teaching English to foreigners.
3. Improving lighting in building and yard.
4. Advocating pure drinking water in mills (individual cups or bubblers).
5. Issuing books containing safety instruction.
6. Placing of bulletin boards in each department on which are posted regularly bulletins depicting the causes and results of accidents.
7. Exhibiting at meetings of employees specially prepared safety films, giving short lectures on safety topics.
8. Arranging matinees for school children to see safety films and encouraging essay competitions for prizes among the children on what the pictures taught them.
9. Designing and distributing safety calendars.
10. Education—encouraging attendance at night schools (Text Books).
11. Formation of safety committees.
12. Visits to all mills and by personal contact arousing interest of the management as well as the men.

As well as above, means are taken to stimulate interest among employers. I may say that in some cases the employers need the stimulant mixed just as hot and strong as the law allows.

1. Comparative monthly statistics showing the position of each mill in comparison with other mills in the province.
2. Chart issued annually classifying all accidents during the year.
3. Letters commenting on accidents which might have been avoided.

I do not intend to elaborate all the methods I have mentioned, but merely to touch on some of the principal ones.

Safeguarding physical hazards, for instance, is important, as this must be the first step taken. There would be no use in asking men to be careful, if glaring cases of unguarded belts or gears were left to trap

the unwary. Safeguarding of hazards must be done if for no other reason than to show sincerity on the part of the employer.

What has brought the best results so far has been the exhibiting of safety films to the employees. The usual procedure is to secure the use of a picture theatre in a mill town, issue tickets to employees a week in advance from the evening show, and inviting the school children to a matinee. Men on the night shift often attend the matinee with the children. Meetings such as these are always well attended and safety films such as "The House that Jack Built," "The Man He Might Have Been," "The Crime of Carelessness," etc., are followed intently. An interval is arranged for during which a short talk on "How to Prevent Accidents" is given. Last year ten meetings were held at different points and invariably the accommodation was taxed to the limit. In some cases repeat shows had to be given to take care of those anxious to see the pictures, who had not, owing to the crowd, been able to secure admittance. After viewing pictures such as I have referred to, the audience is usually in a receptive frame of mind during the interval and listen attentively to anything said from the platform. These intervals are great opportunities for a speaker to push home forcefully the lessons depicted on the screen.

As a result of some such meetings an intensive effort was made in three mills employing on an average 2,250 people to reduce accidents. A date was set for a "No accident week" during which every effort would be made to create a record of no accidents in each of the mills. The week selected was from August 4th to 9th, the same date being set for all three mills in order to create a friendly rivalry between men. During the few weeks to elapse before the opening day of the fateful week arrived various means were taken to secure publicity throughout the mills. The date was announced in every issue of the mill periodical, interesting articles were written bearing on the subject and putting it up to every one in the mills to see that the mill, with which they were connected, passed through the week without an accident of any kind. Inside the mills signs were placed in every department urging the men to be particularly careful for that week. Red coloured traingles were given to the employees to wear on their overalls as reminders of the "No accident week." Large cards were placed in each department with space left for the names of those injured during the week. There was also a large sign printed on cotton placed above the entrance gate referring to the Safety Week, and asking the co-operation of every one to make it a success.

The results were magnificent. At the close of the week two of the mills had a clean record, not having had an accident of any kind, but one employee in the third mill spoiled an otherwise perfect record. One

of the employees playing ball in the machine room, in defiance of all rules and regulations, reached his hand into the winders to recover the ball which had lodged there. His fingers were caught and rather badly crushed, and he lost ten days as the result. That such an accident, caused by misbehaviour, should have happened was very regrettable, but much more to be deplored was the callous indifference of this youth towards the success of the campaign in which his fellow employees showed so much interest. The remarkable success of the experiment in the mills referred to shows what can be accomplished in preventing accidents when all pull together.

In this serious business of accident prevention one occasionally meets with an incident combining both humour and tragedy. After an exhibition of safety pictures at a Safety Rally held in one of the mill towns in Ontario I was standing at the door watching the audience disperse and overheard a couple talking of the meeting. The wife remarked to the husband: "John, you will need to be more careful now of the way you throw matches around, you might set the house on fire some day." "Yes," replied John, "I will be more careful, and you will need to stop lighting the fire with coal oil." "Indeed I won't." replied the lady. "I have been starting the fire with coal oil for twenty years and never had an accident yet." This woman was a convert to safety, as it affected the actions of other people, but as far as she was concerned, it would probably take the setting of her clothes on fire to convince her.

As a means of keeping alive the interest in accident prevention all the year around, a good word should be said of the excellent service of bulletins issued by the Ontario Safety League. In nearly every mill in Ontario a Bulletin Board in every department is looked on as essential, and when these boards are taken care of and the bulletins changed regularly, they are a constant source of interest. It is a very difficult matter to secure new material every week for such bulletins, and the members of the Ontario Safety League could, with very little trouble to themselves, be of great assistance to the League and other members thereof if they would send particulars or procure photographs of accidents that they have occurred in their plants. Photos, such as these when prepared in bulletin form, may be the means of preventing similar accidents in other plants.

The distribution of safety calendars at New Year time we have found to appeal strongly to both the men and the families, especially if the illustrations are of a practical nature and treated humourously. Calendars, such as I have described, are taken home and studied, create an interest in safety among the whole family. At the end of each month when a page is turned over a new lesson in safety is exposed to the gaze of members of the family, and so on from month to month. In all the

mills when the calendar idea was taken up the demand far exceeded the supply. The calendar issued for 1920 brought in more letters of congratulation than anything we have produced in the past.

I would like to say a few words on Education and what is being done along this line by the Canadian Pulp and Paper Association. The Pulp and Paper Association came to the conclusion some years ago that the better educated employees are, as a whole, the more efficient they will be, and the more efficient employees are the less liability to accidents. Working along these lines a Committee on Education was appointed; this committee on investigation found there was not a text book in existence covering the pulp and paper industry as a whole. Realizing that little or nothing could be done without up-to-date text books the committee recommended that a fund be started to cover the cost of the compiling of such text books. The Association took up the matter and it speaks volumes for the industry, that all the mills in the Association backed up the proposition and the money was immediately forthcoming. About this time, as a Committee of the Technical Association in the United States was busy along the same lines, it was thought advisable that the two committees work together so that the method of education in the industry in Canada and the United States would be the same, and as the field covered would be so much larger the cost would be proportionately reduced. A fund of thirty thousand dollars has been raised from the mills in Canada and the United States to be used in the production of a set of text books. These books, when they are finished, will be suitable for Class or Correspondence Instruction.

The last point I wish to tounch on, as I feel I have already taxed your patience, is *Plant Safety Organizing.*

I am a great believer in the maxim: "If you want anyone to take an interest in a movement give him something to do." Therefore, I believe that the formation of Plant Committees, popularly elected, will do much to reduce the annual toll of accidents. In the large mills I advocate a committee in each department responsible for the conditions in their own department. Also a Central Committee composed of representatives of the management and the Chairman of the Departmental Committees. The chairmen of the Departmental Committees being members of the Central Committee binds all the Committees together. Inspections are made periodically of the whole plant, and the report considered by the Central Committee, who have power, subject to the approval of the management, to order hazards to be safeguarded. All suggestions are passed on by the Central Committee and adopted or discarded. In the event of a suggestion not being adopted a good and sufficient reason must be given, and a letter stating the objections sent to the employee making the suggestion. When a sug-

gestion is adopted a letter of commendation and thanks is sent to the employee responsible for the suggestion. This is merely the skeleton of a plan which we have found to work extremely well in the mills. Committeemen take real interest in the work and are sincere in their efforts to spread the gospel.

The whole success of safety work is bound up in the successful study of the personnel. The study of the personnel in any mill is most interesting and for the Safety Engineer absolutely essential.

Talking of studying men, I am put in mind of a story I heard recently at a dinner in Toronto. A well-known senator at Washington appeared in the Senate one day, with a beautiful orchid in his buttonhole. The flower raised the curiosity of a friend who inquired where he got it. The senator explained that it had been presented to him by the head gardener of the Government Conservatories, who was a Scotchman and a great admirer of the national poet. By simulating an admiration and interest in the poet he had got around the old man and secured the trophy. His friend determined to try the same game, so next morning he called at the Conservatory and made a point of meeting the head gardener and entering into conversation with him: "I hear, Sandy, you are a great admirer of your national poet and I would like to tell you how I have studied his works, and what a great man he was," began the visitor. The Scot beamed, and the Senator, feeling encouraged, proceeded to greater flights. "Yes, Sandy," said he, "the people of Scotland owe much to their poet and are rightly proud of having had such a great countryman as Willie Burns." The Scotchman turned a withering look on him and expressed his contempt by repeating: "Willie Burns, Willie Burns. Huh, Johnny Washington, get out." One can imagine the great indignation of the Scotch gardener on hearing the national idol referred to as Willie Burns. Study men as an aid to arousing their loyalty but be careful to humour their prejudices.

Ventilation and Humidity

By Adam H. Wright, B.A., M.D.

Read at the Annual Meeting of the Ontario Health Officers Association, Toronto, May 25th and 26th, 1920.

IS night air bad? I once heard a lady ask the late Dr. H. H. Wright. I am not quite sure, he answered, but I don't know how you can avoid it. The inquirer meant outside air as compared with house air. We may say now that outside air at night is not in some ways as good as that of the day, especially during sunlight, but it is certainly the best available. What happens if we do not get it?

One of the most common ailments of those below par as to health in any way, and especially those growing old, is insomnia. Such people often say: "I thought I slept but seemed to awake in the morning just as tired as when I went to bed," and we often find it difficult to provide a satisfactory remedy, especially when the condition is due to foul air from defective ventilation as is very frequently the case.

In considering ventilation arithmetical computations are not altogether satisfactory as mathematical correctness is generally impossible, but we may start with one estimate frequently made by hygienic authorities. Each adult is supposed to require an "hourly supply of 3,000 cubic feet of air for the removal of his own effete matters" (Harrington). If there is not a constant inflow of fresh air and outflow of used air, some vitiation occurs in a very short time. To get enough of a continuous current is difficult in very cold weather in our climate. We must consider that ventilation goes hand in hand with heating, and the question of expense, especially with present prices of fuel, becomes a very serious one.

We expect much from diffusion and gravity, but they are not sufficient in inhabited rooms. Under ordinary circumstances there are inlets and outlets in every room through flues, cracks, round windows and doors—even through bricks, plaster and mortar; so there is always some ventilation even when we try to prevent it by double windows, papering the walls and closing up cracks. All these cracks, crevices, etc., are serviceable when we make openings by raising windows, for instance, to allow the ingress of outside air.

The simplest and most common method and perhaps the most effective is to open a window. It is impossible to estimate the correct extent of the opening for a series of nights. A short time ago I spent a week at St. Catharines. I slept in a large room with about 3,000 cubic

feet capacity. I awoke early in the morning after the first night. I feared the air of the room had become vitiated (as it certainly had to some extent) got out of my bed, and raised the window about one inch. There was considerable wind outside, and the air was cool, temperature 35° to 40°. I also opened the door three or four inches and returned to bed. The air of the room soon became perceptibly cool and I thought fresh. I placed some more bed-clothing over me, slept soundly for over three hours and awoke quite refreshed. As my bed was between the open window and open door I could distinctly feel the current of air passing over me before I went to sleep.

This brings up the important question of the draught which is considered so dangerous. We are told in that admirable text-book on Practical Hygiene by Harrington and Richardson that draughts which are productive of discomforts are more dangerous than the ordinary vitiation of the air. As I sleep in a draught with comfort and benefit during the greater part of the year—always when the temperature is not at or below zero, I have not that dread of a healthy draught which so commonly prevails. That precious draught of "God's pure air" is much maligned. For 40 years or more I have been hearing of colds caused by draughts and now I don't believe that one out of forty of such colds was caused by a draught. Germs, not slices of fresh air, are the most common causes of colds, especially "colds in the head." This view is not, however, universally accepted.

However, it must be admitted that draughts are not always harmless. A cold draught within an enclosure is much like a cold breeze out of doors. You cannot expose yourself inside or outside with comfort and safety, clad in pyjamas or a bathing costume. If not properly protected by bed-clothing or suitable wearing apparel you will get unduly chilled and suffer evil consequences therefrom. You may call the result a cold if you like. It may be observed in this connection that the matter of protection from cold with proper ventilation in dwelling houses is fairly simple though it may be costly; but the question of heating and ventilating public buildings such as churches, schools, concert halls, etc., with safety and comfort to those assembled is a more difficult problem which I shall not now discuss.

To come back to our bedroom one may properly ask how much air should be introduced during our sleeping hours—or how large should the opening be? No fixed or definite directions can be given, but the following figures may furnish a rough guide. In the colder months raise or lower the window from one to twelve inches or less than one inch in zero weather. A temperature below zero will not now be considered. As before mentioned I got in St. Catharines a stiff draught from an inch opening. The following night I found the inch not

effective. I increased to about five with result not satisfactory. According to my estimate more air came through the inch opening in five minutes than was likely to come through the five inch opening in five hours. The inrush depends on various conditions, but chiefly on difference of temperature and degree of motion of the outside air. With equal temperature and perfect calm there will be no movement either way, and the chief interchange between the two atmospheres will then be that due to diffusion and gravity.

The chief requirement in the ventilation of a room at night is a regular income of air with a constant current, called by architects, "through" ventilation. The most convenient method is to open a window on one side and a door on the other. The door may be wide open or if you want privacy an opening of three or four inches will not interfere with the latter and will be sufficient for ventilation. Open the window as far as deemed advisable. Keep draughts away from the bed as far as possible. If this is impossible, let the draughts come and go as they like and sleep where you like. If you fear draughts it is a very simple matter to deflect the current by some of the many devices which are well known and used.

It is advisable to have the temperature of the bedroom during sleeping hours about 50° in cold weather. If at bedtime the average temperature of the house is about 70° it is not prudent to retire with the air at that temperature when a cooling process takes place during the night and get up in the morning in a shiver-producing atmosphere of 45-50°. To avoid this contingency it is well to open the window some time (say an hour or two) before going to bed. If the door is closed at the same time the temperature will be lowered in the bedroom without affecting the living room, where the temperature should not be reduced before retiring.

If when getting into bed you have sufficient covering to keep the body and extremities warm you will be in a good hygienic condition and you can breathe the comparatively cool air quite as safely as you can respire even cooler air outside when you are walking or motoring along the streets. But if you are afraid of your head you can protect it by some of the methods recommended by our grandmothers in olden times; wear a nightcap with ear-lugs.

The simple rules proposed apply only to an ordinary normal inhabited dwelling and are not suited for a sickroom. However, the care of the sickroom does not properly come under our jurisdiction, because our duty is to prevent the necessity of the sickroom for all persons until they have reached the age of 90-100; and then as they pass away respectably and quietly our ordinary methods of ventilation and heating will answer very well.

It would seem fitting to consider other matters closely associated with ventilation such as heating, lighting, plumbing, etc., but we have not the time now. There is, however, one important matter so intimately connected with ventilation that it should not be overlooked, *i.e.*, the necessity of providing moisture in the air of our dwellings during cold weather.

As to the amount of moisture actually required there is considerable difference of opinion. That may be due wholly or largely to the character of the climates in different countries. The relative humidity should be about 50%. If less than that, say 35 to 40, the dry air has a great absorbing power and it will take up moisture from persons and things—from the skin the mucous membranes, especially of the respiratory tract from the lips and nostrils down to the bronchial tubes, from wood furniture, from leather binding of books causing them to crack and fall to pieces. It causes undue dryness of the skin, irritation of the throat with a cough sometimes bronchial, sometimes a laryngeal cough of a peculiar character ending in a "squeal." The so-called "winter cough" is very common in Canada. Some of us found it very obstinate in the past but we now think that the proper remedy is the provision of moisture in the air we breathe.

The most common methods of inducing this moisture are by heating water in water-holders attached to our furnaces, humidifying pans fastened to our radiators, and various forms of humidifiers planned by architects and sanitary engineers. About two to four (or perhaps more) gallons should be evaporated per day in a fairly large house. Dr. H. J. Barnes, of Boston, has devised a humidifier which he uses in his office. It evaporates a gallon of water a day which produces about 53% humidity. Dr. Nasmith recommends for factories what he calls a moderately cool and moderately dry air in motion with temperature 65-68° with a humidity of not more than 50%.

It fortunately happens that moisture in the air enables those who dwell in the house to live comfortably at a lower temperature as compared with a house where the air is dry. For instance, Dr. Barnes finds that the humidity produced in his office makes the temperature of 65° to be perfectly comfortable where before he had required 70 or 71°. In my own home we use probably two gallons of water each day, and we are generally comfortable with a temperature of 65°. We think this saves a fair sized chunk of coal each day. I supposed at one time that the mixture of a certain amount of outside air admitted during the day helped to increase the moisture within the house, but I learned from Mr. Dallyn, our sanitary engineer, who has helped me materially in the preparation of this paper, that in winter cold outside air is dry, or becomes so almost immediately after entering the warm house so that we

get no increase of moisture in that way. The percentage of moisture in the air is measured by an instrument called a hygrometer of which I show a few samples.

Let me conclude by a quotation from a pamphlet issued by The Potter Co., of 16 Adelaide St. W., Toronto, which tells us much that is true in a few words. "Imperfect ventilation and low humidity lay the foundation stone for catarrh, frequent colds, bad headaches and general ill health."

DISCUSSION

F. A. DALLYN, C.E. (TOR.).

I AM glad Dr. Wright has introduced such an excellent topic as ventilation for discussion at this meeting.

Problems in ventilation to-day mainly divide themselves into two groups. Those having to do with temperature and conduction and circulation, and those having to do with the humidity or moisture contents of the air.

The question of humidity which Dr. Wright has just touched upon is not generally understood for this reason—reports of humidity are always in terms of *relative humidity* for the temperature of the air at the moment of determination.

In midsummer, with a temperature of 85°F. 90%, relative humidity denotes a saturated condition of the air; at this temperature it contains approximately one and three-quarter pounds of water per 1,000 cubic feet of air.

In midwinter, with a few degrees of frost 95%, relative humidity denotes the presence of only three-tenths of a pound of water per 1,000 cubic feet of air.

To establish proper conditions in a factory, where the outside temperature is 85° and the relative humidity is 90%, it is necessary to circulate the air of the building through a refrigerating apparatus. Such an apparatus precipitates moisture from the air and upon its recirculation a relative humidity of approximately 50 to 65% can be brought about with an air temperature about 65-70°F.

If such condition prevailed in all our factories in midsummer I can well imagine workmen being loathe to leave the bench for the delights of the park.

To properly appreciate the difference between heat loss by conduction and evaporation let us take a simple example: a cubic foot of water lowered 1°F. in temperature gives off 1 B.T.U. of heat. The evaporation of 1 cubic foot of water requires a heat transference of 1052 B.T.U.

Speaking in smaller quantities 1 cubic centimeter lowered to 1°F. gives out approximately 5-10 calories, whereas to evaporate 1 cubic centimeter of water requires a heat transference of approximately 585 calories.

Rule.

Winter air, if not heated, is relatively humid, that is, it will not readily take up moisture.

If it is heated, even a few degrees, it becomes relatively *very dry* and will absorb moisture from everything—plants, tissues, and furniture, consequently in winter moisture must be added.

Summer air, if above 80°F., is usually moderately too excessively humid, and if the temperature be lowered the air becomes over saturated and things are made to feel damp. To bring about right conditions in summer the air requires refrigeration to precipitate a portion of the moisture and reheating—exposed walls, etc., of buildings usually perform this function—in order to establish a 50% relative humidity.

A Plan for a More Effective Federal and State Health Administration

FREDERICK L. HOFFMAN, LL.D.
Third Vice-President and Statistician the Prudential Insurance Company of America

(*Continued from the May issue*).

Misleading Sickness Statistics

The ascertainment of the true rate of sickness in a given community or in a selected group of persons is a much more difficult task than the determination of the approximate death rate. Death is a strictly definable term whereas the terminology of disease defies precise analysis.* Earlier inquiries into the subject of disease prevalence bear in some respects evidence of greater intrinsic merit than more recent efforts in this field of statistical research. Regardless of decidedly better opportunities for statistical and medical investigation, the same conclusion applies to sanitary surveys, which only too frequently are made without the required qualified knowledge of the underlying technical principles and the most accurate methods of statistical inquiry. There has, for

*There is much need of a more adequate and strictly scientific treatment of the subject of death and the duration of life, physiologically considered. Among the more important discussions are the chapter on death by James Ritchie, in the treatise on "General Pathology", by Pembrey and Ritchie, and a brief discussion by Adami in the text-book of pathology by Adami and McCrae. The discussion of death and particularly of the lesions leading to sudden death, as determined by post-mortem, in the text-book of pathology by Delafield and Prudden, is of exceptional value. The subject, of course, has quite a literature, which has been admirably summarized in an article on "Death", with special reference to physiological variations, by W. H. Howell, including a long list of references, in the Reference Hand Book of the Medical Sciences, vol. iii, 3d edit., New York, 1914. To those who are concerned with the so-called "Causes of Death", the recently published work on "Causation", with a chapter on belief, by Charles A. Mercier, M.D., London, 1916, will prove of the very greatest value. This work includes an extended discussion of the so-called "causes of death" on the basis of a well-reasoned theory of causation opposed to the doctrines of John Stuart Mill. See also in this connection two exceptionally valuable articles on "The Causes of Diseases", by Ernest S. Reynals, M.D., reprinted in the *Scientific American Supplement* for February 16th and February 23rd, 1918. Of additional value is the treatise on "The Origin of Disease", especially of disease resulting from intrinsic as opposed to extrinsic causes, by Arthur V. Meigs, Philadelphia, 1897, and the earlier work on the "Causation of Disease", with an exposition of the ultimate factors which induce it, by Harry Campbell, London, 1889. In these and many related matters only a thoroughly equipped research department can render the exacting scientific aid required, if results of far-reaching value are to be forthcoming. Such research may extend over many years and the results for a long time may be both costly and disappointing.

illustration, been no more comprehensive investigation into the sanitary conditions of the City of New York than the report made by the Council of Hygiene in 1865. By way of contrast the so-called "Sickness Census" of the Framingham Community Health and Tuberculosis Demonstration is an excellent illustration of the serious shortcomings of present-day superficial methods of inquiry. Thus, for illustration, it is said in this report that "It is interesting to note that the number of individuals per family recorded in the census (4.52) is a higher rate than the average for the community at large as based on the 1915 census (4.49)". There, of course, is nothing interesting or suggestive in a differential percentage which disappears if the figures are reduced to the first decimal; yet the conclusion is drawn from a difference of only 0.03 per cent. that this "is probably due to the fact that the census covered a higher percentage of adjacent urban population than of pseudo-suburban village and rural population". The pretense of knowledge implied in this assertion is as regrettable as the obviously erroneous conclusion itself.

In the same investigation the terms "health census" and "sickness census" are used interchangeably, although, of course, neither one is precisely the equivalent of the other. The "census" itself is made to include diseases as such as well as conditions contributory thereto, or resulting therefrom. The term "disease" is not defined, but the request in the house to house inquiry for information was for either the disease *or the cause* of sickness. Clearly upon such crude assumptions no satisfactory medical, social and economic results can possibly be secured. By combining all diseases and conditions, the group defined as "sick" is made to include such cases as "run down", "nervousness", "cold", and "old age". The analysis is not by sex, so the correct incidence in proportion to the population cannot be determined, since the total sickness rate in the population is misleading when maternity cases or puerperal affections are included in a return for both sexes combined.

Of much more practical value are the sickness surveys of the Metropolitan for a number of representative cities. The sixth community survey of this company is for the principal cities of Pennsylvania and West Virginia, including special observations on the disease liability of coal miners, iron and steel mill employees, and females in coal miners' families. Of value, also, is a Health Census of Cheslea Neighbourhood, New York City, made jointly by the Metropolitan and the Chelsea Neighbourhood Association. Of still greater value is the sickness survey of Dutchess County, New York, by the State Charities Aid Association. Those who are employed in connection with inquiries of this kind are, however, generally wanting in the required technical qualifications. Sickness surveys, like sanitary surveys or industrial surveys, demand an exceptionally high order of trained intelligence. Henry W. Rumsey, in a

series of essays and papers on "Some Fallacies of Statistics Concerning Life and Death, Health and Disease", London, 1875, forcibly directed attention to the numerous fallacies inherent in the use of crude data, most of all when the underlying physical and pathological facts and conditions were but imperfectly understood. Rumsey was one of the first to suggest the collection of sickness statistics, observing in an address delivered as early as 1859 that "a public registration of sickness would provide a natural and obvious means of correcting mere statements of apparent results, often certified as the 'cause' of death on a cursory review of the dying or the dead". Limiting himself at the time to the registration of disease in poor-law institutions, hospitals, etc., he took occasion to point out, however, that "We may admit that even if all the diseases thus relieved and recorded were uniformly registered by competent authorities, a large proportion of sickness would still escape public notice, unless and until by the voluntary co-operation of medical practitioners the registration were extended to cases occurring in the higher and middle classes of society". In his volume of collected papers Dr. Rumsey refers to a final report of a committee of the British Medical Association, dated August 22nd, 1874, recommending to the Local Government Board the establishment of a national system of registration of diseases. Charles E. Paget, some twenty years later, published his classical essay on "Wasted Records of Disease", in which every question pertinent to the present consideration was raised, though left unanswered during the twenty years which have intervened since Paget's eloquent appeal was made jointly to the medical profession and the general public. The time has come when this demand for more trustworthy information concerning the prevailing rate of sickness can no longer be disregarded by those in public authority or by the members of the medical profession engaged in private practice. The data are required for social and economic purposes as a basis for practical measures of urgent reforms in the conditions which affect the life and the well-being not only of our wage-earners, but of the population at large.

Contrarily to the assumption that useful data of this character would be forthcoming under compulsory health insurance, the experience which has thus far been had conclusively proves that the information secured would be of decidedly limited intrinsic value.* Since a system of compulsory health insurance itself is largely responsible for a considerable

*For a full discussion of the important question as to whether the statistics derived from compulsory sickness insurance are of intrinsic value, and useful for public health and actuarial purposes, see the treatise by Wm. A. Brend, M.D., on Health and the State (p. 305, et seq.). See also his observations on the practical impossibility of correlating the provisions of the Insurance Act to the improvement of insanitary conditions on the basis of sickness experience data (p. 249, et seq.).

amount of malingering,* alleged sickness or exaggerated slight affections, the statistics secured under an experience of this kind are more generally misleading than scientifically conclusive. The practical solution is a simple requirement under which all authorized medical practitioners contribute the results of their individual experience to a collective investigation under the control of the state. A concrete illustration of what may be achieved in this direction, even on a purely voluntary basis, is the Collective Investigation Record of the British Medical Association, including contributions by Prof. Humphry, Sir W. Gull, Sir James Paget, and others, and comprehending such important questions as the communicability of phthisis, a report on acute pneumonia, chorea, acute rheumatism, etc. What was possible on a voluntary basis in 1883-84 should certainly be feasible, if necessary, on the basis of a statutory requirement at the present time.

*The most important works on malingering, with special reference, however, to the English experience under Workmen's Compensation and National Health Insurance, are the following: Malingering or the Simulation of Disease, by Jones and Llewellyn, London, 1917; Malingering and Feigned Sickness, by Sir John Collie, M.D., London, 1917; there is also an earlier work on malingering by Sir John Collie, issued in 1913, which is useful as emphasizing the increase in the tendency to malingering during recent years. A convenient summary of the evidence is included in the treatise on Health and the State by Wm. A. Brend, M.D., New York, 1917. See also my discussion of this question in Facts and Fallacies of Compulsory Health Insurance, 1916, and the Failure of German Compulsory Health Insurance, New York, 1918, in which the evidence is derived from German sources and is practically brought down to date.

To be Continued.

Social Background

Neighbourhood Workers' Association, Toronto

Summary of Operations for the Year

THE past year has been one of very marked activity and of real progress in many lines of effort. The growing influence of the Neighbourhood Workers' Association has meant that it has been appealed to to carry forward many different types of work. The growth of the work at the Central Office has necessitated a removal to new offices and the appointment of a number of additional members of the staff. With the appointment of each new worker, however, the demands seemed to grow proportionately and there always appears to be more work clamouring for attention than it is possible for our office to handle. This process will not go on indefinitely but it is to be anticipated that for several years to come there will continue to be a rather rapid growth until the Association overtakes its problem and is able to adequately handle it.

To cope with the increase in work it has been decided to make several divisions, each with a Chief Secretary. The two main divisions for the present will be (1) The Family Work Division, which will include all problems relating to Social Case Work. Under this division will be also the Illegitimacy work to which has been assigned a worker, having specialized training along this line. It was felt that better results could be attained in this way than by having the Illegitimacy cases handled through the regular district channels. The results now being obtained justify this expectation. (2) The second general division will include Special Investigation, Christmas and Fresh Air Exchanges, District Organization and Educational Work.

The General Secretary would like to record his sincere appreciation to the members of the Staff for their loyal support throughout the year. They believe in the organization and have been working to achieve its purposes with great enthusiasm and ability.

Fresh Air Exchange.

Last summer a Fresh Air Exchange was opened at the Central Office to act as a Clearing House for Fresh Air Work, in order that duplications might be prevented and every child or mother should have a Fresh Air Outing where the need and right to such an outing was demonstrated.

A very important and valuable piece of work was done by the Exchange, so much so that there has not been the slightest question raised by any one as to the advisability of continuing this work. Through its operations, hundreds of children received an outing last summer, who otherwise would not have been cared for at all.

Christmas Exchange.

Generosity is abroad at Christmas. There is a great need that this generosity should be directed into wise channels, and that the giving public should not be disheartened by hearing of families receiving an incredible number of Christmas Baskets, while others, equally deserving, received none at all. The Exchange aimed to prevent this and had a very gratifying measure of success. Its efficiency, of course, is conditioned by the number of organizations which use it and there are always those, who take up this work at Christmas, who are not engaged in social work during the year and thus do not know the procedure to follow. It is expected that the Christmas Exchange will be an increasingly helpful factor in the situation.

Star Santa Claus Boxes.

The Neighbourhood Workers' Association have co-operated with the *Star* in securing the lists of children eligible for *Star* Boxes. The N.W.A. District System was used and each of the nine districts had a Superintendent for this purpose with assistants who would make out the lists and see to the distribution. Those engaged in this work have felt that a system could be devised which would harmonize the work and have it operate according to uniform standards all over the city. After careful consideration and consultation with the officials of the *Star*, who were, of course, anxious to secure the highest possible efficiency, it has been decided to centralize this work at the Central Office and make this a part of the work of the Christmas Exchange. The District System will, therefore, beginning next Christmas, be discontinued and the work operated by the Christmas Exchange under the general supervision of a small Committee of the Central Council.

Egg and Milk Fund

There are few starving children in Toronto but there are very many under-nourished children, not receiving food of the right kind, and who are consequently undersized and under weight. The fund was opened through the generosity of Mr. M. A. Cook, who, while not a citizen of Toronto, has extensive business interests here and who took a particular interest in seeing that under-nourished children should be given eggs and milk, which is the best possible food for them. We have worked

very closely in conjunction with the Nutrition Clinics operated under the Hospital for Sick Children in co-operation with the Department of Public Health and although the work has been in operation such a short time some really rather remarkable results have been attained, in gain in weight and health on the part of the children. It has been decided to make this a permanent fund.

Publications.

A much larger and more complete edition of the Social Service Directory was issued during the year, which was distributed among the Social Workers and Business Men of the Community and which filled a great need. There was a large demand for the Directory and it is to be hoped that those who have copies will make any necessary corrections as to officers, etc., as owing to the expensive publication, it will not be possible to publish an edition every year. The Annual Report and the Fresh Air and Influenza Reports were also published and distributed during the year.

Incorporation.

The Association has sought and obtained Incorporation under the laws of Ontario to carry on its work as a Philanthropic and Social Service Organization.

Influenza Epidemic.

The "Flu" appearing again last February made a call upon the Association for again organizing the necessary relief work for the distribution of liquid foods, bedding, etc. The epidemic did not receive as much public attention as in the previous year, but there were a tremendous number of cases, with a large death roll. Some conception of the great amount of work involved can be seen from the fact that when at its peak 647 individuals were being cared for daily.

Again the Association had the co-operation of a large number of organizations in carrying on this work, which was done with a minimum amount of friction and a maximum amount of efficiency.

Lecture Series.

The Lecture Series this year was held under the auspices of the Department of Social Service of the University of Toronto and this co-operation between the Neighbourhood Workers' Association and Social Service Department was highly satisfactory to both. There were fifteen lectures, a paid up membership of 112, and the fees covered all expenses involved. The members followed the Lectures with keen interest and made it abundantly clear that they felt that this piece of social education was well worth while.

Federation.

The Association records its obligations to the Federation for Community Service for the support given to its work during the year. The Neighbourhood Workers' Association has from the first believed firmly in the Federation idea and of the help that this could be to the individual organizations. During the past six months particularly the effectiveness of this method of social money raising has been amply demonstrated. The Federation has come through the experimental stage and is now established on a firm basis. The Neighbourhood Workers' Association will continue to co-operate in every possible way with the Federation in its plans.

Central Council.

The Central Council has met regularly with the exception of the February meeting which was cancelled owing to the epidemic. The amount of business pressing for consideration and action by the Central Council has increased to such an extent that some action will be necessary. Either the Council will have to increase the number of its meetings or else delegate the transaction of more of its business to the Executive. The Central Council now occupies a dual function. It is the governing body in regard to the definite work carried on by the Central Office. It is also the body which must, to a large extent, decide matters of general social policy in the city. I would recommend that the executive be increased in number and given fuller responsibility in regard to Central Office business, thus leaving more time in the Council for more general discussions of policy. The Secretary would like to express his keen appreciation of the work of the President. Mr. MacLean has not only been deeply interested in the work, but has given his time most faithfully and ungrudgingly, and the success of the year's work is due to this in no small measure. The executive have worked together most effectively on the various plans which have been put through during the year.

The Commission on Social Aims appointed by the Central Council decided to make a special feature of the problems of Illegitimacy and Desertion. During the year data has been gathered for a report dealing with each of these two problems and the urgency of these problems has been brought to the attention of the social workers and the public during the year. It is hoped that a Recreation Survey will also be made possible through the co-operation of the Toronto Playgrounds Association.

During the year some data was gathered in regard to the increase in rents which was embodied in a report printed in the press and used in a variety of other ways. The Housing Problem, at the present time, seems to be in a rather hopeless situation, however, and what is needed is not so much additional information as vigorous action.

Social Case Work.

During the year 1,137 new, 43 re-opened, 212 continued, and 16 out of town cases have been handled through the Central Office, making a total of 1,408 cases, involving 2,400 adults and 3,383 children. Last year there were 773 cases handled. This now makes a total of 1,910 listed in our files. Each month has shown a large increase over the work of the same month a year ago. During the month of April in 1920, 759 cases were active in the office. In the same month last year 307 cases were active in the office. The cases were handled with certain exceptions, largely by the regular N.W.A. system of referring the cases to the local organizations, the workers at the office, necessarily, in very many cases working in close co-operation. The large number of cases coming to us presents certain problems. As a clearing house for social work it is difficult to refuse cases, but we are much more anxious to raise the quality of the work than to increase its volume. Measures now being taken, outlined above, will, I believe result in a general betterment of standards.

District Organizations.

While the work in the various districts naturally has its ups and downs, on the whole, the district work is in very much better shape than a year ago. All the local associations are organized and are meeting regularly. This year it was decided to open the work in the fall by a general meeting of the workers from all districts. This was very largely attended, in spite of the fact that it happened on a very rainy day, and the precedent thus established should be followed. There should be each year several meetings which would bring together the workers of all the districts. It is not merely a matter of spending a pleasant hour together, for these personal contacts undoubtedly result in increased efficiency in the work. The best co-operation is only possible between people who know each other.

New Work.

The largest piece of work which opens up before us for the coming year is to develop work which is already under way. The ideal, as I take it, of the Association, is to do solid and enduring work and this means staying with a problem until real results are obtained. In several directions, particularly in regard to Illegitimacy and Desertion problems, we really have just begun our work and have paved the way for an important contribution to be made this next year, if we follow these problems up with sufficient tenacity and intelligence. In a number of other directions too the work for the coming year will be that of consolidating and developing plans already inaugurated. There is one new

piece of work, however, which I believe to be very necessary and which I hope to bring to the attention of the Executive at an early date, namely, the establishment of a Bureau of Legal Advice. The necessity for the securing of justice to the poor needs no emphasis, and I am convinced that there is a strong need for some place where social workers or their clients could bring cases involving legal difficulties without being faced with the necessity of paying legal fees. It is the experience in other cities that practically all the work of such a Bureau is accomplished without the necessity of taking the case into court.

There are some of the more obvious ways in which we have tried, or are planning to try to meet the social needs of Toronto. A great deal of the work at our Central Office is impossible to tabulate. It has been the ideal of the office, not merely to carry on specific pieces of work, but to help in every way possible the various affiliated organizations, each in their own special tasks. In a large number of cases the General Secretary and members of his Staff have been asked to give addresses and their advice sought in regard to problems relating to these organizations. Sometimes this advice appeared to be good and resulted in action, in a considerable number of cases, no result wherever was discernible. The intent and purpose remain the actuating ideal of our office.

In this report I have naturally not emphasized our failures, but while not dwelling on them publicly, the remembrance of them is very grievous unto us. With Browning we can only say, "What I aspired to be and was not, comforts me."

We have not graven it over our door-posts but we have tried to make, as the principle of our action and mental attitude, the motto inscribed on the Coat-of-Arms of the Prince of Wales, "I serve."

F. N. STAPLEFORD,
General Secretary.

The Provincial Board of Health of Ontario

CASES AND DEATHS FROM COMMUNICABLE DISEASES REPORTED BY LOCAL BOARDS OF HEALTH FOR THE MONTH OF MAY, 1920.

COMPARATIVE TABLE.

Diseases.	May, 1920 *Cases.*	*Deaths.*	May, 1919 *Cases.*	*Deaths.*
Smallpox	290	0	92	2
Scarlet Fever	383	10	391	7
Diphtheria	374	46	264	26
Measles	2,264	45	34	0
Whooping Cough	99	12	46	8
Typhoid	41	12	18	6
Tuberculosis	237	127	233	188
Infantile Paralysis	1	1	..	..
Cerebro-Spinal Meningitis	8	7	12	11
Influenza	48	40	..	..
Influenzal Pneumonia	..	13	..	355
Primary Pneumonia	..	293	..	..
	3,745	606	1,090	603

SCARLET FEVER AND DIPHTHERIA BY CITIES 4 WEEKS ENDING MAY 22, 1920.

	Scarlet Fever. *Cases.*	*Deaths.*	Diphtheria. *Cases.*	*Deaths*
Toronto	120	2	141	17
Hamilton	24	0	48	6
Ottawa	70	5	39	4
Kingston	10	0	20	1
Belleville	1	0	13	0
St. Catharines	....	...	8	0
London	10	0	10	0
Fort William	8	0	0	0
Port Arthur	11	0	1	0
Niagara Falls	2	0	5	1
Brantford	3	0	6	0

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH.

	May, 1920. *Cases.*	May, 1919. *Cases.*
Syphilis	81	98
Gonorrhoea	107	129
Chancroid	3	5
	191	232

One death from sleeping sickness reported from McKillop Tp., Huron County.

The reports of Communicable Diseases for the Province for the month of May show the epidemic of Measles is on the increase. Of the 3,745 cases of communicable diseases reported there were no less than 2,264 cases of measles with 45 deaths. If measles are eliminated the increase in all the other diseases are only a little over 400, with practically the same number of deaths as in the corresponding month of last year.

Diphtheria, which has been prevalent in some localities for some months, shows a marked decrease in the death rate from 15.2 in 100 in February to 12.0 in May.

Scarlet fever caused 3 more deaths, while the cases are 8 less.

The deaths from Influenza, Influenzal Pneumonia, and Primary Pneumonia are 9 less than in May, 1919.

It will be observed in the table of Venereal Diseases there is a decrease in the number of cases reported by the Medical Officers of Health. This may be attributed to some extent to physicians who do not comply with the regulations, and fail to make reports of the cases they may have knowledge of.

News Items

Dr. M. M. Seymour, Commissioner of Public Health, Saskatchewan, attended the recently held Conference of State and Territorial Health Officers in Washington, where he outlined the Saskatchewan Municipal hospitals plan to a large and interested meeting.

Dr. Victor Heiser, of the International Health Board of the Rockfeller Foundation, has just completed a brief survey of the Public Health teaching facilities in a number of the Medical Schools in Eastern Canada.

Dr. J. W. S. McCullough, Chief Officer of Health, Ontario, delivered an address before the Chamber of Commerce, Windsor, recently, and on the same evening read a paper before the Essex County Medical Society on the Progress in Public Health in Ontario During the Past Ten Years.

Hon. Dr. Wm. F. Roberts, Minister of Public Health for New Brunswick, was re-elected by acclamation in the bye-election held in June, in St. John. THE JOURNAL extends hearty congratulations to Dr. Roberts and to the people of St. John in their recognition and endorsation of the valuable public service rendered by Dr. Roberts.

Dalhousie University has received substantial assistance from the Rockfeller Foundation for its Medical School. We congratulate the University and trust that support for the teaching of Public Health and Preventive Medicine has been included.

There has been established in the University of British Columbia a Chair of Public Health. The British Columbia Provincial Branch of the Red Cross Society is to support the Department for a period of three years.

The Ontario Division of the Canadian Red Cross Society has undertaken to provide for the establishment of a Department of Public Health Nursing in the University of Toronto. The Red Cross will provide the entire financial support necessary for the three year period. In

addition ten scholarships are being offered by the Ontario Red Cross. The course is to be open to graduates of recognized schools of nursing. It will extend over one academic year and will be given for the first time during the year 1920-21.

Miss Forsythe has been appointed Executive Secretary of the Child Welfare Section of the Canadian Public Health Association.

The Venereal Diseases propaganda film, "The End of the Road", has been shown to capacity houses in various cities and towns in Ontario Manitoba, Saskatchewan, Alberta and British Columbia.

Dr. C. K. Clarke and Dr. C. M. Hincks, of the Canadian National Committee for Mental Hygiene, were in Regina early in June.

The Annual Meeting of the Canadian National Council for Combating Venèreal Diseases was held in Vancouver on June 23rd.

Editorials

CHILD WELFARE IN ONTARIO

A PROGRAMME has been undertaken by the Provincial Board of Health of Ontario for maternal and child welfare work during the coming year. Forty thousand dollars has been appropriated by the Government for the work. Its general scope and characters is of such a progressive nature that some mention of it should be of interest to readers of the PUBLIC HEALTH JOURNAL.

It is planned to immediately establish a public health nurse in each health district whose duty it will be to organize local community health centres with the ultimate ideal of stimulating each local centre to itself procure a nurse who will undertake maternal and child welfare work as well as general public health under the supervision of the district nurse.

Every facility will be provided for the district nurse in order to arouse general interest in the necessity for pre-natal care and allied problems. A motor car will be provided for each nurse so that she may readily cover her district in order to persuade individual mothers of the necessity for supervision and expert advice. Each nurse will also be provided with an inexpensive exhibit in addition to the travelling exhibit which will be available from time to time. The travelling exhibit will be in the form of a motor truck fully equipped for the purpose. Somewhat elaborate educational material will be carried and in addition a pediatrician and a trained nurse will accompany the truck for the purpose of explaining and demonstrating scientific methods. The general direction of the work will be in the hands of Miss Mary Power, while Miss Knox has been appointed assistant director. It is understood that in addition a supervisor, a pediatrician, and an expert dietitian will be appointed to the staff.

The above is a general outline of the Government plans as far as they have been worked out although some details have been omitted. With such a programme under way it is not too much to hope that within a reasonable time every pregnant woman and every infant in the province will be under expert supervision and that the present mortality of 99 deaths per 1,000 births, creditable as it is, will be rapidly reduced to a minimum.

CO-ORDINATION

The recent initial meeting of the Advisory and Consultative Council of the Canadian Red Cross Society was an unqualified success.

For the first time members of all bodies represented on the Council were assembled for the essential purpose of co-ordinating their various activities.

Unity of purpose, great candour and plain speaking in the discussions, coupled with a keen appreciation of the value of co-operation, served to make the gathering one of the noteworthy occasions in the history of organized public health endeavour in Canada.

A very hearty vote of thanks to the Central Executive of the Canadian Red Cross Society for calling the meeting was unanimously carried, and the Deputy Minister of the Department of Health, Canada, expressed warm appreciation on behalf of the Dominion Government.

Book Reviews

Everyday Mouth Hygiene, by JOSEPH HEAD, M.D., D.D.S., Philadelphia and London: W. B. Saunders Company, 1920. Cloth, $1.00 net.

If the reader of this little book, dealing with a subject the importance of which is not yet fully grasped by many, will but take the trouble to carry out thoroughly the instructions contained therein, he will undoubtedly save himself from a very considerable share of the dental ills that flesh is heir to. The author indeed makes the statement that "cleanliness of the teeth and gums will absolutely prevent decay." Now no one is more insistent than the writer of this review on the co-operation of the patient in the matter of personal care of the mouth. He is nevertheless firmly convinced that this is a most extravagant statement. Practice mouth hygiene by all means, but be assured that if decay is to be prevented there must be along with this intensive care of the mouth, a properly balanced diet. In the writing of this review we are not concerned for the moment with this phase of prevention dentistry. Suffice it to say that with proper diet, united with such care as Dr. Head so admirably teaches, there would be but little need of fillings, still less of crowns and bridges, and that bugbear of oral focal infection would be almost a thing of the past.

The author rightly dwells upon the importance of a clean mouth in the prevention of disease. He also notes, and this deserves emphasis, that a pulpless tooth may be the source of serious systemic trouble, and yet be free from all local pain. Do not think then that because your "dead" tooth is comfortable it is, therefore, free from being a source of danger. This does not mean that all "dead" teeth should be extracted but it does mean that every possible effort should be made to avoid "dead" teeth and in a well cared for mouth, one given proper care from childhood, there is but little excuse for having a "dead" tooth.

Vigorous brushing of the gums and teeth is strongly recommended. It is well, however, to remember that vigorous brushing ought to be preceded by the thorough removal of all irritating deposits by the dentist. Then under such massage the gums will become firm and healthy.

Dr. Head is most insistent on the use of dental floss to remove the food debris, and masses of bacteria from spots which the brush cannot reach. The manner of using the floss is fully illustrated by numerous cuts and the practice can not be too highly commended. The author's method of brushing is also fully illustrated.

Dealing with pyorrhea he clearly shows the progressive destruction of the supporting tissues of the teeth due first to irritation of the gum margin, followed by infection of the deeper tissues, leading to the so-called pyorrhea pocket. And while the etiology of pyorrhea is a much debated question it is the concensus of opinion that the keeping of the gum margin in a healthy condition, free from all irritating deposits, is the greatest factor in not only preventing but controlling this much dreaded disease. It is the author's opinion that in the regular care of the mouth, after once being put in good condition, mouth washes are of little value. Salt is recommended as a dentifrice.

A few final pages in this most practical and helpful little book, dealing with irregularity in children's teeth. The interesting observation is made that the teeth do not grow to fit the face but the face grows to fit the teeth. If the teeth can be made to assume their true normal arch the rest of the face develops in corresponding symmetry and beauty.

C. A. SNELL.

The Health Officer. By Frank Overton, M.D., D.P.H., Sanitary Supervisor, N. Y. State Dept. of Health, and Willard J. Denno, M.D., D.P.H., Medical Director of the Standard Oil Company. Octavo of 512 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $4.50 net.

This work written, primarily, to tell "the health officer what to do, how to do it, and why he should do it," is on the whole a very commendable effort.

The authors have succeeded in producing a book which can be read with profit by intelligent laymen interested in the problems of public health (and what intelligent layman is not?) as well as by the physician or professional health worker.

It is a book of five hundred pages and deals with the organization and functioning of public health departments, with the problems which confront the worker in public health and with the means which may be adopted to solve them.

The authors throughout the book constantly refer to methods in vogue in New York State and to regulations relating to public health which are in force there. If readers who are not residents of that State, will substitute the laws and regulations or sanitary code of their own State, Province or municipality for those specifically mentioned in the text, little confusion will arise. However, this feature of the book, while possessing certain merit, is open to criticism. A broader outlook than it is possible to obtain from con-

sideration of the activities (however admirable they may be) of one State, is desirable in a work which is designed for readers everywhere.

A few minor errors have been overlooked in proof reading. On page 456 it is stated that the gelatine plates for ascertaining the bacterial count of samples of water are incubated at 20°C and 37°C. Surely it is intended that agar not gelatine plates should be incubated at the latter temperature? On page 460 Chamberlain filters should read Chamberland filters. Finally, on page 469, in discussing ventilation, a table is given showing "the approximate composition of *expired* air," and 4.1 per cent. of carbon dioxid is given as the percentage in volume of that gas in such air. This statement is refuted on pages 473 where 0.04 is given as the "percentage of carbon dioxid in expired air." This will undobutedly be corrected in the next edition, because the book, despite such minor defects, is well worth while, and can be cheerfully recommended to health officers and public health workers generally.

J. G. F.

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Industrial Dust

BY A. S. LEITCH, SHELDONS, LIMITED, TORONTO.

Read at Annual Meeting of Ontario Safety League, Toronto, April 13th, 14th and 15th.

THE presence of dust in the atmosphere is practically universal. Its effects are far reaching and extend into the upper regions of the world's atmosphereic envelope. Light and humidity are affected by its presence, as well as the comfort, convenience and cost of human existence. Every day "Dust" collects a heavy toll from humanity in the form of money and life. It has been stated by eminent surgeons that the lungs of people who live in the conjested sections of our large cities are a dull grey colour, whereas the lungs of those who live in open sections, such as the country or in the mountains, are a brilliant red, and that this difference in colour can only be accounted for by the greater amount of dust present in the air of our cities. Undoubtedly this high dust content is a serious menace to the lives of our citizens, but it is the workers employed in industries where the process of manufacture produces harmful dusts, vapours, fumes or gases, who are the greatest sufferers and, therefore, from a "Safety First" standpoint the subject "Industrial Dust" offers a very fertile field for investigation. The object, therefore, of this paper is to call to your attention.

1st. The various harmful gases, fumes, vapours and dusts produced by industrial processes.

2nd. The physiological effect which these dusts have on the human organism.

3rd. Present day methods by which they can be eliminated and healthy conditions maintained in the workrooms.

The various dusts to which industrial workers are exposed may be classified under the following headings:—

1. Mineral.
2. Metallic.
3. Vegetable.
4. Animal.
5. Combination of two or more of the above.

In describing the physiological effects of these industrial dusts we will disregard the above classification and consider the different forms of these dusts according to their effects as follows:—

1. Irritating dusts which have only a mechanical action and act directly upon the part most exposed.

2. Poisonous dusts which, when entering the system, cause a general poisoning, or have an affinity for certain parts of the body, such as the blood, bones and the nervous system.

3. Infected dust which carries with it disease germs.

The action of irritating dusts found in metal grinding industries such as iron, steel, brass, copper and in stone-cutting, granite surfacing, emery grinding, etc., is chiefly local, affecting those parts of the body directly exposed such as the eyes, nose, throat and skin. The sharp particles may enter the unprotected eye of the workman and cause an injury, the extent of which depends upon the amount of material entering the eye and the force with which it enters. The thin, transparent membrane covering the eye and lining the lid becomes red and inflamed, there will be pain, great sensitiveness to light, and an increased amount of tears. If neglected, infection may occur by dust entering the eye or from attempts to remove the particle of dust with unclean rag or tooth pick. The eyelids will be swollen and stick together and the eye may be permanently injured.

Should the sharp metal particles be inhaled the lining membrane of the nose may become affected and show redness and swelling, followed by an inflamed condition of the skin around the nostrils. Later chronic nasal catarrh often develops also causing the loss of the sense of smell. Not only is the lining membrane of the nose affected, but also that lining the tube which extends to the ear. This inflammation affects the middle ear and causes an unpleasant sensation of ringing in the ears, followed by a considerable loss of hearing. This irritating dust may pass beyond the nose, throat and bronchial tubes and enter the lungs, thereby causing a chronic inflammation and rendering the worker more susceptible to tuberculosis.

Other irritating dusts such as hemp, flax, cotton, jute, tobacco, may cause keen inflammation of the eyes, nose, throat, lungs or skin. That of furs, feathers and hair may likewise have an irritating effect and in addition, carry disease germs with which the worker may become infected.

Corrosive dust, such as soda and potash, used in the manufacture of soaps and bleaching powders, cause inflammation and ulceration of the skin and other parts exposed. Poisonous dust, such as lead, arsenic, salts of mercury, the most common of which is lead dust, to which the worker is exposed in numerous trades, usually enters the system by

being inhaled or through the stomach by eating food contaminated by lead laden hands. When entering the stomach, the lead, after undergoing changes, becomes absorbed and enters the blood, thus being carried to all parts of the system. The tissues chiefly affected are the arteries, nerves, brain, muscle and also the blood.

Dangerous fumes, vapours and gases usually show their effects immediately, on account of the rapidity with which they enter the blood and are carried to all parts of the body. The symptoms vary according to the amount inhaled. These fumes may be classified as follows:—

1. Irritating fumes and vapours which act locally upon the eye, mucous membrane of the nose, throat, larynx, bronchial tubes and the lungs, such as ammonia, chlorine, nitric and sulphuric acid.

2. Poisonous, intoxicating fumes such as carbon monoxide, benzol, wood alcohol, carbon di-sulphide, benzine, aniline, and lead, which affect the heart, blood and circulation, the nervous system and digestive organs.

3. Others, such as wood alcohol, affecting the optic nerve and causing blindness, chronic acid which causes ulceration and perforation of the partition separating the nostrils, phosphorus which affects the jaw bones, and mercury which particularly affects the teeth and lower jaw.

Irritating fumes, such as ammonia, cause inflammation of the transparent membrane covering the eye. The fumes of nitric acid have been known to cause intense inflammation of the mucous membrane of the bronchial tubes and later, when the worker has apparently recovered from the effects, inflammation of the lungs appears, causing death in a few hours.

Intoxicating fumes, such as carbon di-sulphide, benzol and benzine, causes headache, dizziness, nausea and weakness in the legs.

Poison fumes, such as aniline may cause attacks varying in severity with the amount inhaled. Those unaccustomed to the fumes are particularly susceptible. In mild attacks there will be headaches, dizziness, pain in the eyes, a feeling of fulness in the head and great weakness in the knees. The speech is slow and uncertain which, with the staggering walk, gives the appearance of drunkenness. The worker's face is pale at first, later blue, and he breathes with difficulty. If treated at this time by inhaling fresh air and heart stimulants, he recovers in a couple of days, but should the worker be so unfortunate as to fall and be unnoticed in some secluded part of the plant, he will continue to absorb the aniline fumes and death will occur very shortly. Very frequently the worker apparently recovers, returns home, and during the night or the following day the symptoms recur, the pulse becomes feeble, breathing is slow and difficult, and unconsciousness will occur followed by death.

Lead fumes arising from improperly hooded pots in the composing room of the printing industry frequently cause anaemia and lead poisoning among the printers.

Wood alcohol is used frequently in the preparation of varnish and shellac and in the manufacture of hats, artificial flowers and dyes. In poisoning from the fumes, the worker suffers from cramps, nausea headache and dizziness. His flesh is tender to the touch, his temperature is low and he complains of great weakness. The symptoms very much resemble those of ptomaine poisoning. In addition, the sight is affected varying in degree from dimness of vision to complete blindness. In fatal cases, death occurs from paralysis of the heart. Wood alcohol produces a particularly harmful effect upon the optic nerve, causing blindness even in mild cases of poison.

Mercurial vapours are met with in the manufacture of several scientific instruments, and mercurial salts. While mercury is one of the heaviest of metals it is known to volatalize or evaporate at ordinary temperatures. For this reason, all operations should be performed under hoods, as these fumes when inhaled affect the blood and nervous system, particularly the teeth, gums and jaw bone.

In order to protect the workman from the harmful effects of these various forms of industrial dust it is first necessary to collect them in such a manner as to prevent their escape into the general atmosphere of the workroom, and second, to deliver into the room a continuous supply of pure, fresh air at the proper temperature and in volume equal to that extracted.

Air is the common medium employed to collect and carry off this dust and both natural and mechanical circulation is in general use.

There are a few instances where gases can be carried off by natural circulation, such as in the case of a vat, tank or melting pot, where the temperature of the vapours and fumes is much higher than that of the outside air, due to the difference in temperature between the warm air in the pipe and the air surrounding it.

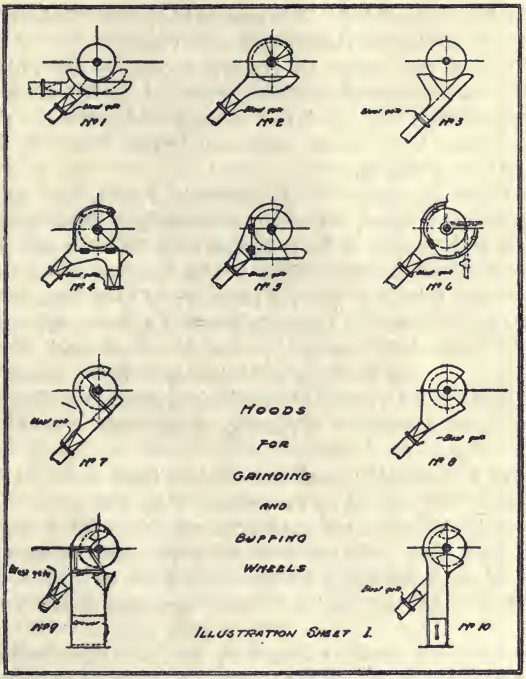
The natural gravity system has the following objections:—

1. Little or no circulation is established when the heat is first turned on. Take, for instance, the case of a blacksmith's forge, it will be found that when starting in the morning and while the fire is burning up the heavy smoke will refuse to rise up the cold chimney and will spread out under the hood into the room, in fact, completely fill the room, before the cold air in the flue has been sufficiently heated to start a circulation which will carry up these dense fumes.

2. The action of a gravity system is seriously affected by the direction and force of the wind. We are familiar with instances where a natural draft flue will give particularly good results on certain days and on other days will be worse than useless.

3. In buildings where exhaust fans are in operation a gravity flue is of little use as the action of the exhaust fan tends to create a down draft into the building.

The removal of waste material from machines in industrial plants by means of fans or blowers has been in general use for about eighty-five years. It is the most efficient and satisfactory method known. There are three general methods in practice by means of which the suction by



the exhaust fan is applied to remove the objectionable dust. These are the downward, lateral, and upward movement of air currents.

With the downward system the hoods are located at a point lower than where the dust is produced. This, of course, is only applicable to the removal of heavy dusts, gases, etc., such as shavings, sawdust, chromate of lead, barium sulphate, paris green, silica, hydrated carbon of lead, and most pigments and salts. This method is also very successfully used in connection with the filling of boxes, barrels or kegs.

Lateral systems are those with which the hoods are placed at the sides or at the front or back of the machines producing the objectionable dust and have been used successfully in the carrying off of nitric acid fumes and in places where hoods cannot be placed above the vat. This method is also frequently used in connection with vats for pickling before galvanizing and plating.

By the upward system, which is the most common in use, is meant one where the hood or extraction member is located above the machine, vat or tank to be ventilated. This system is preferable where the dust fumes or gases are lighter than the air and, therefore, have a tendency to rise. It should be used for the removal of coal gas, ammonia, hydrocyanic acid, carbon monoxide, steam, fumes of methyl alcohol, nitric oxides, hydrochloric acid, and the vapours which readily rise from vessels containing lead, arsenic, antimony or zinc when the same are heated to a certain degree.

When fumes or vapours of inflammable liquids such as methyl, alcohol, benzine, or ether, are to be removed by exhaust system, belt driven fans with copper or brass blades must be used and under no circumstance should a motor driven fan be installed where the motor or wiring system is in direct path of the material to be removed.

The design, construction and installation of a proper exhaust system can only be successfully handled by men who have specialized in this class of work. In the past this work has been left too much in the hands of tinsmiths, who probably have had no experience along this line but whose usual occupation is putting on tin roofs or making eave-troughs.

To make a thoroughly good and efficient hood is an art in itself. It requires the best skill of an experienced blow pipe man. Of course almost anything can be made work after a fashion, but to construct a hood that does clean work and does not require an excessive velocity or volume of air, is something known to but a few mechanics, very few of whom are outside the employ of those making a specialty of blow-pipe work.

Hoods are never carried in stock by any one, there being such a variety of shapes and sizes that it is always advisable to build the hood on the job.

A governing principle for the design of hoods used for collecting refuse from machines is to so shape the hood that the knives, saws or beaters will throw the refuse directly to a point where it will be caught by the high velocity air.

A hood is really nothing more nor less than a trap, its object being to prevent the escape of the dust or waste material and direct it to a point where the highest velocity of the branch pipe can reach it. If the

hood fails to do this it is not properly designed for the particular work required of it and in order to make up for this faulty design it will be necessary for the fan to handle a greater volume at a higher velocity and, of course, with an increased power consumption.

Hoods for grinding, polishing and buffing lathes have to be specially designed to suit the character of the work for which the wheels are used. A hood suited to one class of work on a good type of lathe would be wholly unsuited to some other class of work on exactly the same lathe. For instance, the grinding of some things can be done on the top of the wheel while others are more easily ground at the centre of the wheel or on the underside.

On illustration sheet No. 1 are shown different designs of this type of hood, each having its special application according to the class of work for which the wheel is used.

Speaking generally, the more a grinding wheel can be enclosed, the less dust will escape from the operation, but with certain classes of work the wheel is so completely used as to make it almost impossible to do much more than run an exhaust pipe to it, something similar to hood shown in Fig. No. 3, in which case the exhaust action is utilized to carry away as much dust as possible from the immediate vicinity of the worker. Cases of this kind are generally the result of an insufficient number of grinders and by installing a few extra machines it will be found that all the wheels can be properly hooded.

On illustration sheet No. 2 are shown some hoods designed for use with woodworking machines. The hood over the upper knives has a mouth at the bottom several times the area of the pipe, consequently it has very little lifting power at the mouth. Immediately above the apron around the knives the mouth is drawn in on all four sides so as to reduce the area to about equal the pipe area. It is also drawn back at a considerable angle in the direction the shavings fall from the knives. See Hood No. 4. The shavings are thrown at once into the contracted area where the velocity is the highest and being once set in motion it is a simple matter to keep them moving.

The hood to the bottom knives of a planer is little more than a shallow hopper with a rectangular opening in the bottom connecting with the exhaust pipe. The end of the pipe is usually left open to prevent clogging up, as otherwise, if the refuse should bridge over the opening in the bottom of the hopper, it would shut off all circulation and the pipe would then become dead until cleaned out.

The hoods to the side head of a planer are similar to the side head sticker hood in Fig. 2. These should be fitted with ball and socket joints.

To be Continued.

The Responsibilities of Medical Health Officers

By Hon. Dr. Wm. F. Roberts,
Minister of Health, New Brunswick.

(Address before Association of Medical Health Officers of Nova Scotia, at Kentville July 6th, 1920.)

MEDICAL Health Officers, or, as these officers are more generally called, Medical Officers of Health, constitute about the oldest part, and, certainly one of the most important parts, of the modern system of Public Health Administration.

It is a somewhat difficult task to describe the duties of these officers, for although the name of the office is identical or nearly synonomous everywhere, the position and status of these officials differ widely in the different provinces and states. In England, where, I think, the office was first instituted, or, at any rate, first fully and efficiently developed, the part played by them is of first-rate importance. Upon them is laid, practically, the whole duty of the local administration of the laws relating to Public Health, and their powers are varied and ample. The practice in England, "The mother of modern Public Health Administration," is in considerable contrast to that which obtains very generally throughout the United States and Canada. With the English the laws relating to Public Health are looked upon with much the same spirit, and administered with much the same vigour, as are the other laws and regulations relating to public and private order and justice. In a word the "police" powers of the Sanitary authority are made much more use of, than on the American continent, speaking broadly. With us Public Health matters, more especially of recent years, have been closely, and some would say, inextricably mixed up with philanthropic and altruistic views and sentiment, nurtured by a hundred bodies, independent and voluntary, each devoted to some special praiseworthy object. It is unnecessary to say that these objects are not minimized by their exponents and promoters. Medical Health officers, therefore, and indeed all prominently connected in an official way with Public Health, have become, perhaps perforce, largely propagandists, and the "police" functions of Sanitary law, have also probably perforce, assumed a subordinate place. The appeal to law with us is a "*dernier ressort*" and chief reliance is placed upon moral suasion and education. It is proper to say that in a considerable number of large cities, especially

in the United States, the two principles of Health Administration are acted upon with fairly equal vigour, so that, although altruism and hygienic education then reach their very extreme, at the same time, "police" power is exercised very freely.

It would be improper for me, in this short note, to enter at large upon a discussion relative to the merits of each principle. Just as is the case with so many of the origins of our other authorities a multitude of good reasons could be adduced to sustain either principle, and it is fairly certain that a combination of both, carried out with tact as respects the prevailing practice in England, and with reason and the absence of fanaticism regarding the principle so popular with us, would represent the ideal practice in Health Administration.

Whatever principle or combination be adopted, it is most evident that in it the Medical Health officer plays a most vital role. He is the man close to the people. He is the authority upon which we must rely for the knowledge of local conditions, local customs, and, above all, local prejudices. With him often will rest the decision when to act, how to act, and how far to go. He must never forget the profound maxim, "That all things are lawful, but all things are not expedient." He must never let Valour run away with Discretion, and, at the same time, must not think that Discretion can cover up and justify a course of action marked by irresolution, hesitancy, a constant attention to popularity, or by catering, for one moment, to wealth, social position, political influence, race, creed or colour. Such deference is, indeed, the complete and, at the same time, irrevocable condemnation and ruin of all Public Health measures in a community. Nothing brings them more quickly and justly into public contempt and no amount of subsequent impartial action will suffice to wash away, for a generation, the stigma so contracted.

Viewing the subject broadly it would seem that, with us, two opposing courses or schools govern in the matter of the Medical Health officer, as respects usefulness and efficiency of Health Administration. These, for convenience, can be expressed as Quantity and Quality.

The one school holds that this officer be thickly stationed, in order that he be easily found, and ready to act upon any emergency, for emergency, and not routine, be it remembered, makes up the normal life of Public Health officers, almost of all grades. A close, constant supervision is, also, only attainable under such conditions. There is very much, indeed, to be said for such contention. By referring to this school as the exponents of "quantity," rather than "quality," it is not meant, for a moment, that the actual quality of these closely set officials is in any degree inferior, other things being equal to that of the sparsely placed men. "Quality" is here used, solely, to designate the amount

of time and attention that can be devoted by these officials to their duties, and to the place the Public Health will naturally occupy in their thoughts and activities. For it is very evident that, in our relatively poor and sparsely settled country, medical men, wholly devoted to this work, and in large numbers, is a financial impossibility. Hence the trite and threadbare discussion respecting the virtues of the "part-time" and "full-time" system. Certain it is that Public Health work has become a "specialty," and that a "specialty" cannot, under ordinary circumstances, be carried on successfully as a minor occupation. It must be the major one or nothing. I will not press the other notable objection respecting the difficulty and embarrassment the "part-time" man meets in connection with his work, in dealing with his own patients and those of his colleagues and, perhaps, rivals. Too much, I think, has been made of this, but, of course, it carries some weight.

The most decisive argument for the sparsely located Health officer is, of course, his devotion to one thing—that thing being Public Health. In spite of himself he does, indeed, become a specialist, and if to this education from experience he has the added instruction from college and laboratory, he soon blossoms into the most pronounced and exclusive specialist of all the professions. But, because of his infrequency, his personal visits can be but "few and far between" and even these few of but fleeting duration. Under such a system supplementary aid is imperative, especially in rural districts, and it is to this supplementary aid we look in New Brunswick, where the "full-time" plan has been adopted.

These aids consist of the Sub-District Board of Health and its staff. We place these Boards under the permanent and ex-officio chairmanship of the Medical Health officer, and the staffs under his direction and control. So far as Public Health proper is concerned apart from the Medical School Inspection and the collection of Vital Statistics, the essential elements of these staffs are the Secretary of the Board and the Sanitary Inspectors. The theory which mainly actuated us was, that there are numberless things to be done in Public Health work that a layman, under proper guidance, can do equally well as the medical man, and, of course, presumably, at a substantially smaller cost. He obtains the "particulars" of notifiable diseases; he placards; he quarantines; he disinfects; he makes stated and regular inspections for nuisances and so forth; he attends to "complaints"; he posts notices, distributes cards; he is the cicerone of the Medical Health Officer when the later comes to his "area"; and perhaps not least of his functions, he is the "guide, philosopher and friend" of his local associates in the matter of Public Health, and a constant exponent and expounder of the hygienic life and of the Public Health Administration. The latter

descriptive phrases may be, and probably are, idyllic at present, but we look forward to their becoming material and most pregnant, as well as most common-place truths.

At present, these officials are a novelty to the people, especially in rural localities, and are looked upon with "mixed" feelings by them. The "mixture" is largely impregnated with suspicion, and is not entirely devoid of contempt. But as it is Tim's glory, among other good works, "to calm contending Kings" and "to bring truth to light", so it shall be with the Sanitary Inspector—he shall come into his own, to the untold betterment of the public.

To enumerate the duties of the Medical Health officer with us in New Brunswick would be to set forth a lengthy and thrice-told tale. He is, in a word, the embodiment of the Public Health Act, and the Regulations thereunder. All that concerns the Health of the Public comes under his notice and is his business, and to him the Chief Executive officer looks for the doing of things. To control epidemic outbreaks yet is unfortunately his most engrossing task, and the one disease which still maintains its old precedence of this kind, is needless to say, smallpox. But the time is surely coming when this pestilent nuisance shall cease from troubling, and then the Medical Health officer will, like the Sanitary Inspector, really come into his own. The repression of contagious diseases, indeed, in all its varied phases, has been the fundamental work of the Medical officer and of the Public Health authority ever since the inception of the office and the institution, but it is destined to lose its pre-eminent position. It has already been recognized that Preventive Medicine, is or should be, concerned with higher and even more beneficial ideals, did opportunity permit—and opportunity rests upon the practical abolition of the graver communicable diseases, an abolition as certain as that of the slave-trade and duelling.

A chief function of the Medical Health officer is, undoubtly, to be the principal channel of hygienic education, and to achieve that, he needs to be possessed of the faculty of public speaking and some facility with the pen. Excessive youth is a hindrance to his work, rather than otherwise. In the present state of partial prejudice against, and aloofness from Public Health measures, the presentation of the necessity of these, by a young man, no matter how well done, is handicapped by the very paucity of his years. It accentuates and seems to confirm the popular notion that all he says is of but yesterday, and will change to-morrow —in a word—that he is merely a faddist–intoxicated, not indeed, "with his own verbosity" but by the exuberance of youth.

And, as in every other specialty of medicine, I think this also holds true, that the Medical Health officer should have some years experience in the practice of medicine, before entering the preventive field. I will

not pause upon this—only to say that the deepest truths of the service of Health and its preservation can only be properly absorbed by a repeated attendance at the bed-side.

I have diverged largely from my proper theme—the *duties* of the Medical Health Officer, and said far more respecting his qualifications for duty than upon what he is actually expected to perform and I submit, there is reason for this. In the first place, his qualifications are of more moment than his duties, for unless he is qualified for his task, his work in what-ever direction it may take him, will be of mediocre quality. In addition, of all public officials, I think the Medical Health Officer should be the least restricted as regards his activity. Precise and pedantic rules governing his motions and various proceedings are here, in my opinion, not only unnecessary but inherently vicious. More especially is this true of the man devoting his whole energy to this work. He is, most of the time alone, so far as his colleagues and his official superiors are concerned. He resembles, in this respect, the country doctor, who if he be anything, must be self-reliant and capable of acting with accessories falling far short of the up-to-date and the ideal. It is true that the Medical Health Officer is generally, though not always, within reach of the telephone, but I think, there is no one here listening to me, that is not already acquainted with that useful instrument's power for promoting misunderstanding, wrong information, impetuous statement and confusion of the intellect. Besides, it is not fair to him, to have him think he is but the vessel or vehicle for transmitting his Executive Officer's knowledge and wisdom. Nothing dwarfs good service more effectively than to be made slavishly dependent upon another's initiative. Routine and the doing of the established and "proper" thing has been for ages, the capital charge brought against all governmental officials; it has been a charge mostly founded upon illusion and often maintained by ignorance. But the Medical Health Officer, while of course properly amenable to guidance and control, should be given as free a hand as possible, and the chief measure of the Executive's own ability and fitness is his knowledge when and upon whom to confer this latitude.

I do not think I need to pursue this subject further. That you have invited me, so late a comer into the field of Preventive Medicine, to say something upon so important a topic is a high honor, an honor and privilege second only to that conferred upon me, when it was permitted me to enter this field, and to attempt something and, perhaps, to have already achieved a little upon the most beneficient stage of action that can employ one's mind and activities.

Why were Half of our Young Men not Fit for the Fighting Line

G. R. CRUIKSHANK, B.A., M.D.

I HAVE analyzed and tabulated one thousand consecutive cases examined for the military draft in an agricultural and saw-mill county.

Five hundred and sixty-four were placed in (A) and four hundred and thirty-six in other than (A).

It will be noticed in the table that five hundred and two disabilities are given which means that sixty-six had one or more serious disabilities. A number had several defects, but the one that influenced the classification is listed:

Defective feet	75
Trauma	48
Tuberculosis	46
Hernia	45
Rheumatism	34
Goitre Exopthalmic	33
Valvular disease of the heart	32
Rapid pulse	26
General debility	21
Varix	20
Disordered action of heart	19
Undersize	16
Epilepsy	11
Defective vision	10
Deafness	7
Goitre, simple	7
Asthma	7
Syphilis	6
Otitis media	6
Syncope	4
Mental defective	4
Psoriasis	3
Tonsillitis, acute	3
Cerebro spinal fever	3

Paralysis	3
Defective speech	2
Urethritis	2
Endocarditis	2
Orchitis	1
Fistula	1
Renalcalculis	1
Total	562

It must be conceded that very little could have been done by health authorities to prevent these disabilities.

Out of one thousand, seventy-five were rejected on account of defective feet, most of them probably congenital. It is possible if these defects were noted early that suitable training of the feet might have helped.

A number were due to improper shoes. That forty-eight were disabled by the effects of injuries seems too large a percentage even for a saw-mill county.

The most remarkable thing in the table is the number of cases of goitre—thirty-three cases of Graves disease and seven cases of simple goitre. A number of cases of goitre, with normal pulse and no other bad symptoms, were placed in (A). That three decimal three per cent. of the young men of the county of Lambton have enlarged thyroids with toxic symptoms is a serious matter. Can someone tell us for a certainty the cause of this complaint?

Under the head of rheumatism and included in the table are not only the cases of acute articular arthritis, but also a number of disabilities usually known as rheumatism. Probably sixty per cent. of the candidates gave a history of rheumatism which of course included all kinds of aches and pains. However, three decimal four per cent. had enough of these troubles to be placed in other than (A). Thirty-two had valvular disease of the heart, so that these two classes together would indicate that probably six per cent. of the young men of the county suffered from rheumatic fever. This is remarkable, and should surely impress upon us the necessity for care of infection in a disease so dangerous.

Forty-six were excluded for tuberculosis, most of them incipient and unsuspected by the applicant. Twenty-six were kept out of (A) with rapid pulses, the cause of which we were unable to locate. Probably these should be divided between hyper thyroidism and tuberculosis, and there were twenty-one cases of general debility.

It may be safely assumed that five per cent. of the young men of the county of Lambton are tubercular, although no doubt many of them will completely recover with ordinary good living. Still it seems reasonable that the health authorities should find out all who were rejected for this in the Dominion and take steps to help them.

It may be noted that only six per thousand were excluded for syphilis and three per cent. for gonnorhoea. This would indicate less than one per cent. venereal before enlistment, but this is not so —many with specific urethritis were placed in (A) because we concluded that they would be well before drafted or quickly cured after; and, of course, we did not make Wasserman's tests.

We may congratulate the county that only seven in one thousand were hard of hearing.

It must be borne in mind that already two battalions were recruited in this county.

On the whole, I think very much good information may be obtained by the health authorities from the medical history sheets all over the Dominion.

Our Safety Week in the Border Cities and Its Successes

By Capt. Jack Robins,
Border Cities Safety Council, Windsor

Read at the Annual Meeting of the Ontario Safety League, Toronto, April 13th, 14th, and 15th.

Mr. Chairman, Ladies and Gentlemen:

I am very sorry indeed that Capt. Robbins is not able to be here to read his paper on "Our Safety Week in the Border Cities and its Success." Capt. Robbins is secretary of the Border Cities Safety Council, and we believe we have the best secretary in the country.

In his absence I shall try to take his place and tell you of our efforts towards promoting safety in our part of the Province.

It is impossible to tell of our Safety Week without first telling of the formation of the local council.

The local council was really the outgrowth of a meeting of the manufacturers with a member of the Compensation Board. At that meeting the problem of the reduction of the cost of accidents in Ontario was discussed and the educational feature of accident prevention emphasized.

Shortly after that meeting twenty-five plants sent representatives to a meeting which was called for the purpose of organizing a Safety and Sanitation Committee of the manufacturer' section of the Border Chamber of Commerce. A chairman and secretary were elected at that meeting, and it was decided to hold monthly round table meetings of superintendents and foremen.

The first round table meeting was arranged for April 24th, 1919, and Mr. C. W. Price, general manager of the National Safety Council, was the speaker. Mr. Price also spoke at the Chamber of Commerce luncheon that day, and what he told of the paid secretary plan sounded so good that the manufacturers at once took it up and arranged to form a local council instead of merely a committee.

Capt. Robbins was secured as the secretary. He was sent on a tour of the cities of the United States who then had paid secretaries. He was gone two weeks, and when he got back he was so enthusiastic regarding he possibilities of holding a real Safety Week in the Border Cities that plans were at once made for the holding of such a week.

In arranging for the week it was not so much the idea of preventing accidents for that week only as it was to awaken the residents to the

possibilities of organizing for safety and carrying out the program for the entire year.

Just as industrial safety must be "sold" to the plant managers, superintendents, foremen and workmen, so must public safety be "sold" to the community at large.

Our selling plan was to explain our intention to all the organizations in the district. We talked at the Rotary, Kiwanis, Automobile Clubs, at the Chamber of Commerce weekly luncheon, to the teachers, the City Councils and Ministers' Associations. They all promised to assist us and when the week arrived they did do splendid work.

The program for the week consisted of safety sermons in the churches on Sunday, the Rotary Club allowed us to provide a safety speaker on Monday of the Safety Week, the Kiwanis Club on Tuesday, the Automobile Club held a special luncheon on Wednesday and the Chamber of Commerce on Thursday was a joint Safety and Boy Scout Day.

Each evening during the week mass meetings were held in the Armoury and were attended by workmen, business men and their families. We were a trifle nervous as to the outcome of these mass meetings because we did not know how the people would take to attending meetings for the purpose of listening to talks on how to prevent accidents. After the first meeting we were convinced that we were giving the people something they wanted and the large attendance each night gave us confidence for carrying out the program that had been made for the year.

If we had stopped at the end of the Safety Week our efforts might have been in vain because, even though we did not have a single serious accident or death during the week, safety work does not consist of a one week's effort but must be carried on all the year.

Shortly after our week we started the school of safety instruction. This school met twice a month in the Chamber of Commerce rooms and a man of authority on the subject for the evening gave a lecture on that subject. After the talk the meeting would be open for a general discussion and many valuable points brought out.

That the school was popular was evidenced by the fact that an average of 265 "students" attended. When we consider that these people, men and women, attended, regardless of weather or transportation conditions we know that any effort along organized safety is appreciated and well worth while.

The results to plants is direct and the manufacturers in the Border cities are now gaining the benefit. One hundred and sixty-five diplomas will be issued some time in May to the men and women who attended 5 per cent. of the lectures. In our plant we have twelve men who will receive diplomas, and while they are not all in positions of authority yet

they are safety men and carry on safety work along with their regular work. For example, the morning after the lecture on Goggles there were twelve men who had a first hand knowledge of why men should wear goggles at work, and they were all busy telling their fellow workmen about it. The demand for goggles was heavy that day and men are wearing them more regularly than before.

For next year we are planning to conduct the same school for beginners, an advanced school for the ones who have received diplomas this year, and also a school for truck drivers and automobilists. Also safety will be taken up as a part of the regular school work and taught to the children.

It can be taught to the children easily and they enjoy the lessons. You know it is as interesting for a child learning to read to have as a lesson a sentence like, "When I first cross the street I look to the left, and when I get to the middle of the street I look to the right," as the old one we learned years ago which went something like this, "I see the little red hen, the little red hen sees me." It teaches English just the same and also gives the child a lesson in safety that will never be forgotten.

We are firmly convinced that the answer to Accident Prevention in Ontario is educating the people to practice safety. We also believe that the best and quickest way to accomplish that result is to organize Local Safety Councils in each community.

Not necessarily with paid secretaries in each small town but good live organizations conducting schools and in otherwise boosting the work.

With local councils throughout Ontario we can come together at conventions of this kind and exchange ideas and methods and all be benefited.

A Plan for a More Effective Federal and State Health Administration

FREDERICK L. HOFFMAN, LL.D.
Third Vice-President and Statistician the Prudential Insurance Company of America

(*Continued from the June issue*)

Modern Methods of Health Education

It is possible on the present occasion to make only a brief reference to the suggested section on health education and health propaganda. The most serious objections lie against any form of ill-considered or superficial publicity, which while relatively rare, is nevertheless sufficiently common to suggest an urgent word of caution. A single serious error or ill-considered statement of advice is likely to do more harm to a health organization, whether Federal, State or municipal, than all the good attained through a mass of irreproachable public utterances. The utmost caution is called for and only what is of real value should emanate from a Federal or a State health department, irrespective of the public clamour during a period of exceptional excitement, such as all are familiar with who passed through the epidemic of infantile paralysis or the still more recent one of influenza.* There is nothing more menacing to a public health service than a publicity department which considers it its duty

*The danger of unwise publicity was never more forcibly illustrated than by the ill-advised action on the part of the Board of Health of the City of New York during the infantile paralysis epidemic of 1916. The public has a right to a statement of the facts and it is equally of right entitled to be protected against the dissemination of wrongful and misleading information, conjectures, theories and mere guesswork opinion on the part of those who are assumed to know. As well said in an editorial in the New York Sun (July 30, 1916) under the title of "A Panic in the Name of Sanitation", "We believe the authorities and particularly the Department of Health have contributed unnecessary hardships to the situation that exists and that if it does not make a radical change in its methods it will create in the name of sanitation a panic whose effects will be more terrible than anything the city has to fear from the mysterious disease to which attention is now given". Much the same criticism may be brought against the publicity mismanagement of the epidemic of influenza in the city of San Francisco, where a well-known writer on public health questions, with no thorough knowledge or understanding of the problem, urged in the most emphatic terms the universal use of the face mask on the one hand and of a but recently discovered vaccine on the other. Impartial investigations subsequently proved that the relative case rate and fatality have been lower in Los Angeles where the face mask was not adopted, and that in the opinion of the foremost authorities on vaccine treatment, no safe reliance can be placed upon the use of any influenza vaccine known at the present time, for either preventive or curative purposes.

to issue a continuous stream of bulletins, press notices, etc. It is absolutely unavoidable under such circumstances that, sooner or later, information or advice of an untrustworthy character is given publicity. The public has a right to be protected against the dissemination of ill-considered information or so-called "health news", which may be, and often is, seriously misleading or needlessly alarming. The field of health education has been enormously expanded during recent years, particularly through the co-operative efforts of health promoting agencies such as the American Public Health Association, the National Tuberculosis Association, the American Society for the Control of Cancer, the National Safety Council, the Association for the Prevention of Infant Mortality, etc. More active governmental participation in the work of these associations would materially aid in the highest attainable degree of success on the part of the Federal and State health administrations. In addition thereto, of course, the annual and special conferences of State and Territorial health authorities, under the auspices of the Federal health service, fulfill a most important function. There can be no thoroughly effective co-operation between Federal and State health authorities, unless the officials concerned know one another and know one another well.

Of the many national organizations and activities all of which are more or less in the nature of health promoting agencies, aside from those previously referred to, the following are of special importance: The Eugenics Record Office, Cold Spring Harbour; The International Health Board of the Rockefeller Foundation, New York; The American Home Economics Association, New York; the American Social Hygiene Association, New York; the American Social Hygiene Association, New York; The National Association for the Advancement of Coloured People, New York; The National Board of the Young Women's Christian Association, New York; The National Child Labour Committee, New York; The National Child Welfare Association, New York; The National Committee on Mental Hygiene, New York; The National Committee for the Control of Blindness, New York; The National Conference for Social Work, Chicago; The National Organization for Public Health Nursing, New York; The Playground and Recreation Association of America, New York; The Race Betterment Foundation, Battle Creek; The Red Cross Institute for Crippled and Disabled Men, New York; The Russell Sage Foundation, New York; The International Young Men's Christian Association, New York; The Association of Industrial Physicians and Surgeons, Boston; the American Posture League, New York, and The American Physical Education Association, Springfield, Mass.

There are, of course, a number of others, working, however, chiefly

in a more restricted field. Regardless of the viewpoint that there is much duplication of effort, the fact requires to be kept in mind that in what is practically a new branch of social work the strong initiative and the fixed purpose which lie back of each and all of these organizations are factors of the utmost importance in the attainment of early results of far-reaching value.*

Military and Naval Hygiene

No extended reference to the self-evident co-operation of the Federal health service with the sanitary and medical departments of the Army and the Navy, as well as with the health authorities of our non-contiguous or insular possessions, seems necessary. It is a self-evident conclusion, of course, that such co-operation in the future should not only be more active, but should follow much more carefully considered lines, based upon our war experience, than has heretofore been the case. Whether it would be necessary to make special provision for such co-operation in a separate section is debatable. Any particular question arising could probably be taken care of by the section on health administration and organization, which should be made to serve all of the more or less general administrative and co-operative functions.

The military medical administration has naturally very much expanded in consequence of the war. Its general principles have therefore been much more carefully worked out, as a matter of necessity, than has been found essential or possible on the part of civilian health organizations. A clear distinction is drawn by Joseph H. Ford, M.D., Colonel, Medical Corps, U.S. Army, between the real administrative work of the Army medical organization, which is effected by orders, circulars, memoranda, letters of instruction, etc., and the reports and return, rendered to superior officers, which merely indicate to higher authorities how such methods have failed or succeeded. He properly points out s fact which is frequently overlooked, that reports are of less value thaa results, and he therefore strongly approves of a laudable disposition tn simplify military official procedures, reducing letters, reports and returno to a minimum and replacing them as far as possible by man commands conversations and by frequent inspections. This observation must not be construed as an effort to minimize the practical value of reports intended to serve not merely the purpose of an accurate accounting of services rendered, but also as a basis for subsequent historical in-

*For a full discussion of the question of effective co-operation in line with the future possibilities of reorganized public health activities, see a paper on "The Present Condition of Public Health Organizations in the United States", by Prof. Selskar Gunn, American Medical Association, Chicago.

quiries, the practical value of which is best illustrated by the classical work of Charles Creighton, M.D., on the "Histories of Epidemics in Britain"; in fact, all epidemiological investigations rest largely upon historical inquiries and the intelligent analysis of a mass of involved statistical and other data.

Annual or special reports on health and mortality are frequently prepared by subordinates not sufficiently familiar with the facts, which require presentation as a matter of routine official procedure. The classical reports of Dr. William Farr, on the mortality of the people of England and Wales, owe their intrinsic and permanent value to the fact that they were the work of Dr. Farr himself and not of a subordinate. The same conclusion applies, for illustration, to the early reports of the State Board of Health of Massachusetts, particularly to those of Dr. Henry I. Boswditch and Dr. Samuel Abbott. The centennial discourse of Dr. Bowditch, on Public Hygiene in America, delivered before the International Medical Congress held in Philadelphia in 1876, still ranks as the most useful work of its kind accessible to the student of the public health administration of this country. Efforts at standardization and unification in the rendering of annual, monthly and weekly reports of Federal, State, and local health departments have heretofore failed entirely, and largely so because of the absence of a clear recognition of the practical utility of such reports when properly applied to the solution of the more pressing needs of sanitary administration. The tendency of recent years has rather been in the wrong direction and the reports now rendered are less useful than formerly and often unreasonably delayed in publication, if printed at all, as required by law. The public is of right entitled to a full accounting in all matters concerning the health administration of the community, in the same manner in which such an accounting is rendered by the military and naval branches of the Government. The work of Colonel Ford is an admirable presentation of practically all that concerns an efficient public health administration, including observations on the required co-operation with other governmental and civilian health agencies and organizations. The work also includes a reprint of the general regulations governing the sanitary administration of the Panama Canal Zone, issued originally under the authority of Major-General W. C. Gorgas.

Adequate Compensation of Health Officers

Each and every section of the Federal, State and local health administration should be in charge of a person thoroughly qualified for the position, free from all political influence or interference. The technical sections or departments should be in charge of specialists of reputation as a guarantee of efficiency in service in matters which are not

generally within the full understanding of the public. The scale of salaries and allowances should be liberal, for if we are really in earnest in our assertions that the health of the nation is a matter of paramount concern to all the people, we must be willing to pay the price. In the long run a thoroughly well-paid and contented official staff will prove the best possible investment as a guarantee against the miscarriage of effort in a field of administrative activity in which failure may prove disastrous to the community.

An admirable analysis of the earnings of health officers and their respective employment on a part-time and on a full-time basis has been prepared for the information of the American Public Health Association by Dr. Lee K. Frankel, the president-elect of the association. Out of 417 health officers 48.76 per cent. earned less than $1,000 per annum. Of the 417 officers making returns only 153 were employed full time, the remainder of 264 being employed part time and generally at salaries of less than $1,000. Of the 417 communities represented by the inquiry 101, or 24.2 per cent., required the health officer to be a physician with public health experience; 170, or 40.8 per cent., physicians without public health experience; in 58 cases public health experience of a non-medical character was sufficient, and in 88, or 21.1 per cent., neither medical nor public health experience was considered necessary. There is therefore an abundance of room for improvement, on the one hand, in the raising of the technical qualifications for the status of a health administrator, and as a condition precedent there is the necessity for more adequate compensation as an inducement to entrance into a field which is now in a fair way of being recognized as a profession.

State Health Administration in California

The question now arises as to how far such a plan as is here suggested, subject to change in matters of detail, would meet State requirements. In view of the wide variations in State health purposes certain modifications no doubt would be necessary, in some directions possibly an enlargement of the function suggested and in others a very material abridgement. In the main, however, the general plan and scope of the proposed organization should be found feasible of adoption by the several States, and of course, subject to further modifications, by the larger municipalities. The status of any Federal health organization will probably always remain chiefly advisory and corrective. This conclusion, of course, does not apply to international and maritime quarantines or to the hygienic laboratory or to research work. The real health *administration*, in conformity to our constitutional limitations, must, after all, remain, and properly so, a State or local function. By way of illustration, a very brief reference may be made to the State health

organization of California. While apparently the budget is fairly liberal, it is entirely inadequate to the purpose, considering the vast area of the State and the wide variations in local conditions and special needs. In the Sacramento Valley, malaria is a problem of the first importance, in southern California it is the indigent tuberculous patient, in the Mother Lode region it is miners' hookworm disease and possibly miners' phthisis, while in the city of San Francisco it is, in a rather restricted sense, of course, the problem of Oriental mortality, tropical diseases, leprosy,* etc. The state health organization rests upon a district system, which provides entirely inadequate financial resources, under a single health officer, for an area which may be larger than the combined territory of several New England States. Under the old conception of emergency service during epidemics, or sanitary after-care, the present method is probably as satisfactory as any. Under the proposed plan, however, the State would have to thoroughly reorganize itself and establish a health policy paramount to every financial, commercial or even sentimental consideration.

California offers at the present time the most promising field for far-reaching reforms in State and local health administration. California within the boundaries of a single state sovereignty includes practically all of the various environmental conditions which more or less determine both the average and the maximum duration of human life. The latitude is from 33° N. to 42° N. The area is almost 160,000 square miles, or equal to the combined area of the New England States, New York and Pennsylvania. The State has a Pacific coast line of nearly 800 miles and a range in elevation from sea level to 14,500 feet. The islands of California include the practically barren Farallons and others quite uninhabitable, as well as the beautiful and fertile Santa Cruz and Santa Catalina. The normal range in temperature is from 12° below zero to a maximum of 120° and more in the Death Valley. The range in rainfall is from 3 inches in the extremely arid region of the south to a maximum normal of 113 inches per annum in the extreme north. At San Diego the sun shines nearly every day throughout the year, but at Eureka the number of days with sunshine is only about 100. Wide variations are met with in wind velocity and the frequency

*Leprosy is of comparatively rare occurrence in this country, but apparently the disease is on the increase. It is, therefore, most gratifying that a congressional appropriation should have made the sum of $250,000 available for the establishment of a Federal leprosarium, which, at the outset at least, is intended to care chiefly for cases of an interstate or international character. Leaving out of consideration the State of Louisiana, nearly all of the leprosy cases in this country have been contracted in foreign countries or in the non-contiguous possessions of the United States. Of all the transmissible diseases, leprosy is perhaps the one which, by common consent, is most entitled to Federal consideration, as a national health problem of the utmost serious concern.

of fogs. Seismic disturbances are common in some sections, and the State has the unique distinction of having the only active volcano in the United States.

California has practically every variety of soil from the most fertile to the absolutely unproductive. In the area immediately adjacent to San Francisco fifty different types of soil have been clearly differentiated, from the fertile sandy loam and adobe to dune sands, tidal marsh and river wash. Even more varied are the soil conditions in the great Sacramento Valley, the extreme length of which is approximately 150 miles. Seventy-three soil types have been identified in this area, ranging from widely varying loams and clays to tidal marsh, muck and peat. The relation of such soil variations to health and longevity and to special disease prevalence has thus far been only approximately determined and hardly to much practical purpose. The same conclusion applies to the wide range in the quality of surface and ground waters, although a large amount of useful information has been brought together on this subject in the water supply investigations of the U.S. Geological Survey. The same department has also issued a valuable report on the Springs of California, which emphasizes what is practically as yet an almost undeveloped natural resource of the utmost value in the more scientific treatment of disease.

The health promoting value of the California desert regions has not been made the subject of a thorough investigation. The extraordinary results attained in certain localities, as for illustration, at Indio, in the Colorado Desert, are suggestive of much more far-reaching beneficial results when the more or less involved facts of physiography, climate, geology, soils, etc., are better understood. As encouraging evidences of progress, attention may be directed to the reports of the Bureau of Soils on the Indio area and of the U.S. Geological Survey of the Ground Waters of the Indio area, with a sketch of the Colorado Desert and a supplementary report on "Some Desert Watering Places in Southeastern California and Southwestern Nevada", by Walter C. Mendenhall, Washington, 1909.

Aside from the important physical factors which more or less determine the health of the State, there is an equally wide range in the racial distribution of the population and its social and economic conditions. In some sections certain racial elements predominate, such as the Portuguese, the Mexican, the native Indian, the Chinese, the Japanese and even the East Indians and Koreans. All of these races have their own special obscure mortality problems and exceptional disease predisposition or resistance, as to which additional information would be of real value in the more scientific practice of medicine.

The range in the industries of California is extraordinary and in-

clusive of practically every important occupation involving special industrial hazards, such as the mining of every variety of metal, from gold and lead to copper and quicksilver, and of the non-metallic substances, from salt and borax to cement. There is every variety of lumbering, from the sugar pine forests of the high Sierras to the giant redwoods of the northern coast counties, with all the subsidiary woodworking industries, from ship-building to the manufacture of matches. The smelting industries are thoroughly representative, with all their peculiar problems of dust and fume control, not only of immediate concern to the employees, but also to the population at large living in areas adjacent to smelting plants. The Selby Commission may here be referred to as an excellent illustration of the scientific resources available to the Government when utilized on a thoroughly well-considered plan of co-operation with private interests.

The agricultural and horticultural development throughout the State includes every variety of local conditions, artificially modified where necessary by extensive systems of drainage and irrigation. No other section of the United States illustrates in such a remarkable manner the soundness of the conclusions advanced by the late Prof. George P. Marsh, in his treatise on "The Earth as Modified by Human Action", and from another viewpoint by Elsworth Huntington, in "Civilization and Climate". Only those who are familiar with the truly enormous natural obstacles to be overcome in effective methods of drainage and irrigation can realize the true significance of the new mortality problems which result from defects which at the outset are relatively insignificant, but which may prove serious in their ultimate influences on the life and health of the people. No other diseases better illustrate the force of this observation than malaria and typhoid fever.

California presents every contrast of riches and poverty and of physical well-being and chronic ill-health. For many years the State has attracted invalids from other sections, particularly those afflicted with tuberculosis and other chronic respiratory diseases. No other disease, unless it be leprosy, manifests more clearly certain important interstate aspects of Federal Health Administration. The investigations which have been made by Dr. Sweet of the U.S. Public Health Service on the problem of the indigent tuberculous patient in the Southwest may be referred to as evidence of an increasing interest on the part of both the Federal and the State health authorities in a problem the national importance of which has heretofore not been recognized.

In no other State, therefore, it would seem, are the conditions more ideal than in California to justify the undertaking of a thoroughly reorganized State Health Administration on the basis of new principles and inclusive of new functions essential to the attainment of decidedly

better results. No State is more progressive and more willing to meet the required expense to attain the highest ideals in the proper sphere and function of every branch of the State government. California has three great universities, adequate medical schools and clinical facilities, and numerous well-managed public institutions, all useful for the purpose of sustaining a thoroughly well-worked-out plan for a modernized health administration such as is here proposed.

How much has been achieved within a comparatively short period of time is best illustrated by the gratifying success of the State Land Colony at Durham, which in practically all the details of its administration rests upon the scientific advisory assistance of the University of California. This work which has been carried forward to such a successful termination by Prof. Elwood Mead, the distinguished authority on irrigation, gives every promise of serving as a model to other sections of the country, even though the plan may not prove feasible of universal adoption. What has thus been achieved in the realm of agriculture should be equally possible in connection with efforts to improve health and physical well-being. It is to be hoped that the executive officers of the State Land Colony will see their way clear to initiate a practical method of health supervision, including physical examinations, medical assistance and institutional treatment in conformity to all the knowledge available on these subjects at the present time. If this suggestion could be adopted the State Land Colony would only carry into further practical execution the method so successfully worked out in behalf of the students of the University of California, who for more than six years past have been under qualified medical supervision, which has been provided for at minimum expense, and without the pretense of social insurance, including all that must be considered essential to reasonable medical or surgical needs.

State Health Administration in New Mexico

The State of New Mexico may serve as another illustration. At the present time it may safely be asserted that the State is not only without a State health organization, but not one of the principal cities or larger communities has a thoroughly satisfactory local health board. The registration of deaths is not enforced. The people of the State of New Mexico are of right entitled to a progressive health policy. The health of this State is not merely a matter of local but of national concern as well, as best illustrated during the recent epidemic of influenza, on the one hand, and the problem of the interstate migration of tuberculous invalids, on the other. There are numerous special problems, such as the effect of altitude on health and its relation to the treatment of certain diseases, the proper and more effective use of medicinal springs, the

morbidity and mortality of the Indian population, the special sanitary problems of the Mexican element, etc. None of these are receiving proper consideration at the present time. The State can not possibly hope to attract new residents proportionately to the practically unlimited opportunities for further economic development unless evidence is forthcoming of a well-considered State policy of a health administration more or less in conformity to the outline presented on the present occasion. The efforts which have been made by the New Mexico Public Health Association are deserving of the most liberal encouragement on the part of both the State authorities and the public at large.*

*A special report has recently been prepared on public health administration in New Mexico, by Dr. J. W. Kerr, Surgeon U.S. Public Health Service. This report is an admirable presentation of suggestions more or less in conformity to present-day conceptions of public health administration, as chiefly conditioned by restricted police powers of the state. The report, however, includes suggestions for the investigation, and control of diseases; the need for diagnostic laboratories, the sanitation of schools, public health engineering and public health educational work. The report concludes with the recommendation for the financial support of a State department of health limited to $22,900, or on the basis of the present probable population of New Mexico equivalent to 5c. per capita. If the State of New Mexico were to begin with twice the sum, or, say, $50,000 per annum, for the purpose of an adequate and really effective health administration, the resulting benefits to the people of New Mexico would be many times the amount suggested as a minimum by Dr. Kerr.

To be Continued.

The Red Cross in Nova Scotia

THE Nova Scotia Provincial Branch of the Red Cross Society of Canada is very rapidly carrying out its programme adopted in Nova Scotia last year in carrying out the Peace Time programme of the League of Red Cross Societies of the world.

On July 12th at high noon two great public health caravans, planning a tour of the province, left the Parade in front of the City Hall, under most auspicious circumstances. His Honour, the Lieutenant-Governor Grant and Mrs. Grant, His Worship the Honourable John F. Parker, Mayor of the City, Provincial Health Officer Dr. W. H. Hattie, representatives of the Massachusetts-Halifax Health Commission, of the Red Cross, and others, were present to bid the caravans Godspeed. Dean Lloyd of the Anglican Church, officially blessed the undertaking and then the seven Red Cross ambulances and a number of motor trucks and touring cars left the central section of the City for the Dartmouth ferry. Each of these public health caravans is equipped with educational moving pictures and lantern slides. The personnel consists of six doctors, a dentist and a corps of nurses. They will spend six weeks in reaching the coastal towns and fishing villages most in need of public health assistance and medical relief work. One of these caravans goes north-ward along the shore of Minas Basin, crossing thence to the shores of Northumberland Straits, and skirting the northern coast of the Province, passes through Antigonish, and on to Sydney, Cape Breton, thence to the extreme north of the Island. This caravan passes through a country rich in historic legend and second to none in Canada for its scenic beauty.

The caravan going south goes along the southern shore of Minas Basin, through the historic Evangeline country, by Grand Pre, south through Cornwallis and Annapolis valleys, the heart of the great apple belt, and through the municipality of Clare, where the descendants of so many returned Acadians dwell. This Caravan, after visiting the southern-most portion of the Province at Yarmouth country, returns to travel along the east coast, through Guysboro county, and finally ends the trip at Halifax. These routes are replete with historical suggestions. Grand Pre, home of Evangeline and the scene of the massacre of Noble's forces, Annapolis long the seat of the Government during the French occupation, Shelburne founded by the Loyalists and for a long time the rival of Halifax in wealth and population, Country Harbour founded by a Caroline regiment and connected in tradition with Flora MacDonald dear to the Scottish memory, St. Peters the home of Nicholis Denys

one of the most noted of the old French pioneers, Louisburg which in its prime fell to the Massachusetts militiamen; these places and many more which have experienced war's ravages, or owe their existance to war's exigencies, will now be visited by these Red Cross caravans on their magnificent peace time programme.

These public health caravans are easily the largest travelling clinics and educational exhibits that have been utilized anywhere in the world, and for Nova Scotia to have undertaken such a work indicates a great awakening to the value of public health effort. Particular appreciation must be expressed for the Red Cross which have not only encouraged the movement by every assistance their organisation permits, but have provided the funds which made it possible. The visit of the caravans is bound to have a great effect in stimulating public health interest throughout the Province of Nova Scotia, where the value of this work has perhaps before never been fully realized.

Social Background

Poverty and Malnutrition*

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IN the popular mind poverty and malnutrition are closely associated; indeed to many, the terms are practically synonymous. Among public health authorities and social workers, however, who are attempting to deal constructively with the defect, one finds a wide variety of opinions as to the role played by poverty. But most of the differences of opinion appear, on analysis, to be due chiefly to a different understanding of the term, poverty. Those who regard poverty as of slight importance use the term in its narrowest sense of meaning an inadequate and unsteady income; on this premise they logically conclude that proverty is responsible for the defect only so far as it results in an inadequate supply of food. Those who regard poverty as a major, if not the chief, cause of malnutrition use the term to embrace all the usual concomitants of poverty, bad housing conditions, a low standard of hygiene, inadequate provision for sickness and even ignorance itself. It is quite obvious that of the term is used in this larger sense, poverty must be given an important role.

The larger use of the term is the one which describes poverty as we know it and as we deal with it from day to day. By poverty most of us understand the whole vicious circle of living which originates in an inadequate income and leads back to the same condition. The poor are the underfed, the overcrowded, the sick and the ignorant. Their underfeeding, congestion, ill health and ignorance again tend to keep them on the same economic level or to plunge them even deeper. It is difficult even for purposes of analysis to break this vicious circle at any point and isolate the various factors. Using the term in this sense, we shall attempt to discover first, whether as a matter of fact malnutrition is more pervalent among the poor than among the well-to-do; second, to what extent the evil is due merely to an inadequate food supply and to ignorance, ill health and other factors which are themselves the result of inadequate and unsteady income.

*Reprinted from Proceedings of National Conference of Social Work.

Malnutrition More Prevalent Among Poor Children

The comparison of the growth of large numbers of children of different economic status is a fair index of the relation of poverty to under-development and malnutrition. In this connection the comparison of the heights and weights of school children of Glasgow compiled by Mr. Arthur Greenwood is most significant. His study included 72,857 boys and girls whose ages range from five to eighteen. His findings are the more pertinent in that the factor of racial differences is practically eliminated. The children are divided into four groups on the basis of economic status. Group I as composed of children from "schools in the poorest districts of the city"; group II, from schools in the "poor districts"; group III, from "schools of the better class" and group IV from "schools in districts of a still higher class."

The contrast between the two extremes is most striking but the same variation is found to supply between the children of the same age in each group. The weights of the children in group I, the poorest group, range from six to eleven per cent less than those of group IV, the most prosperous group. In other words, the poorest children are about one year behind the well-to-do in their growth. The difference in height is less striking, ranging from four to six per cent in favor of the more prosperous children. Indeed, the growth of the children at every age varies according to economic status with such mathematical certainty that we are found to conclude that the economic factor is a constant one in determining the growth of children.

Unfortunately no similar comparison has been made of American children. The comparison, however, of the heights and weights of 60,000 school children as compiled by Dr. Burk and Professor Boaz with the 30,000 recorded by Professor Baldwin reveals the same tendency. The Burk-Boaz measurements were made of average children attending public schools in various American cities while Baldwin's measurements were exclusively of those attending expensive private schools. The average curves of growth is from two to ten pounds higher for the private schools children,

The number of children fed under the English school feeding act is a clear indication of the effect of increased income on malnutrition. In England, ninety per cent of the school meals are furnished to "necessitous" children, i.e., children whose malnutrition is due to inadequate income. The reports of the chief Medical Officer of the Board of Education of England shows that during 1914-15, the first year of the great war, the total number of meals served was 29,569,316; and that in the year following, 1915-16, it had fallen to 9,930,074; and in 1916-17 only 5,781,504 meals were served. The Chief Medical Officer ascribes the great decline in the number of meals served to the fact that because

of increased wages and steady work in war industries and regular government allotments to soldiers, for the first time in their lives great sections of the working population had sufficient income to feed their children properly.

Such broad surveys prove beyond the peradventure of a doubt that not only is poverty largely responsible for malnutrition, but that the two are in direct ratio. While most of us would accept this statement as self-evident, there are many, among them workers in the field of nutrition itself, who attach only slight importance, if any, to poverty as a cause of this defect. One physician who is doing excellent work on the nutrition problem states categorically that malnutrition is more prevalent among the rich than among the poor. If such misconceptions are allowed to go uncorrected, the effect will simply be to delay the advent of an effective program for dealing with this defect.

Effect of Limited Income on Family Food Supply

For the purpose of a clear analysis of the subject, so essential to dealing effectively with it, we must determine as clearly as possible just what elements in the standard of living of underpaid groups work most havoc to their nutrition. The interrelation of the various factors makes this a most difficult task. The experience of workers in daily contact with such groups has, however, cleared the field of much of its obscurity. Rowntree's study of poverty in York, England, in 1900 and Chapin's exhaustive work in the Standard of Living in Workingmen's Families in New York City in 1907 are of invaluable service to us here. The method pursued by these workers and their general conclusions are so familiar to social workers as to need no elaboration here. I want simply to recall to your minds what these studies show with respect to the effect of an inadequate income on the food supply of families falling under their notice.

Rowntree analyzed the dietaries of his families with respect to the food requirements laid down by Chittenden and Atwater for men engaged in various pursuits. We shall have to be content with a mere summary of his conclusions. He found that among the middle class there was more than an adequate supply of food; that among well-to-do artisans there was on the whole an adequate food supply, but that among the laboring class there was a seriously inadequate food supply. His study further showed that among the laboring group the dietary was, on the average, twenty-five per cent below that which is deemed essential.

The work of Chapin made a similar contribution and one which strikes nearer home. The weekly dietaries of the families studied were

submitted to Dr. Frank P. Underhill, a food expert of Yale. The families were classified according to their annual income, which ranged from $400 to $1,100 and over. His results are summaried as follows:

Income	Total No. of Families	Underfed Families (22 cents per man per day and under) Number	Percent
$ 400 to $ 599	25	19	76
600 to 799	151	48	32
800 to 899	73	16	22
900 to 1,099	94	8	9
1,100 and over	48	0	0
	391	91	23

Thus it will be seen that among the lowest income groups—those earning from $400 to $600 a year, seventy-six per cent were underfed. The percentage of families underfed declines as the income is increased until in the group earning between $900 and $1,100 only nine per cent were underfed and in the group receiving $1,100 or more none were underfed.

Dr. Chapin's study showed that in 1907 between $850 and $900 was necessary to support a family of five in health and efficiency, provided the income were laid out with unusual foresight. Of the group actually receiving this amount twenty-two per cent were underfed. In other words, it is not until the families are well above the margin necessary for subsistence that an adequate food supply is assured.

Both of these studies clearly indicate that when families are near or below the poverty line the tendency toward underfeeding and hence malnutrition is inevitable. To what extent, however, the food inadequacy is due to a lack of income and to what extent it is due to improvidence, ignorance and other factors, we are not enlightened. A recent study made by Miss Lucy Gillett, formerly of the New York Association for Improving the Condition of the Poor, and Professor Sherman of Columbia University is the first contribution to this phrase of the subject.

The family dietaries of ninety-two families were examined, classified and rated by these experts. With respect to the amount of money spent, the families were grouped into four classes of twenty-three each. The amount of food provided in each case was considered not simply from the point of view of its caloric value, but also from the point of view of the balancing of the various elements on the dietary. The following table indicates in general, the food value which the average family in each group was receiving:

Group	Cost	Calor-	Protein	Phosphoris	Calcium	Iron
	Cents	ies	Grams	Grams	Grams	Milligrams
I.....	19.2	2043	78	1.14	0.51	12.1
II.....	28.2	2665	91	1.39	0.64	14.8
III.....	34.7	3106	109	1.60	0.72	17.7
IV.....	49.4	3889	126	1.95	1.01	20.6
Standard allowance		2500-3500	75	1.44	0.69	15.0

The dietaries of groups I and II who were spending 28.2 cents per man per day or less were deficient not only in energy but in all of the mineral elements essential to growth and a sound physique, phorphorus, calcuim and iron. But the dietaries of groups III and IV who were spending from 28.2 cents to 50 cents per day were generally not only adequate in energy value, but were well balanced. Their work bears testimony to the tendency frequently noted in close work with such families, viz., that where the family's budget is limited an inadequate food supply results. Families living on an inadequate wage attempt to distribute the income proportionately to cover the various essentials. In order that rent, clothing and other needs may be cared for, it is, of course, imperative that the food supply should suffer. The study further shows that not only are such dietaries inadequate with respect to the total caloric value, but that where economic resources are limited a proper balance is more likely to be lacking.

Inadequate Income Leads to Bad Food Habits

The authors found that in many cases where the amount of money spent for food was obviously inadequate a better distribution of food could have been secured for the same outlay. Most striking of all was the scant allowance for milk, fruit and vegetables which in many cases could actually have been increased without sacrificing the energy value of the diet and for the same outlay of money. In other words, a considerable number of families suffered from a combination of two evils, an inadequate income and an ignorance of food values. When it is considered, however, that an adequate working knowledge of food values is possessed today by only a very limited group of educated people, we can afford to be charitable in our judgment of a group who because of economic suppression are totally deficient in such knowledge.

Though less tangible, the evidence is no less real that a state of continued economic deficiency has the effect of establishing unfortunate food habits which persons of fair or ample means seldom acquire. In most worker's families the meals are prepared chiefly in the interest of the bread winner, the needs of the children being regarded as of secondary importance. During the day the children are mainly supplied with left-overs from the main meal or are given "pieces" which temporarily

assuage their hunger but which do not always contain the elements necessary for their growth. In this custom there is perhaps at work a primitive economic instinct to preserve the health and vigor of the bread winner in whom they are dependent. The great misfortune of such a custom is that the needs of the growing child, which from the social point of view are quite as essential, do not receive proper consideration.

Another unfortunate tendency among families of limited economic resources is to regard certain foods as luxuries after the commodity has reached a certain price. This is particularly true of milk and was brought forcibly to our attention during the recent enprecedented rise in the cost of this important food.

During the summer of 1917, the New York Health Department and the New York Association for Improving the condition of the Poor through Miss Gillett made a survey of the effect of the rise in the cost of milk from nine cents to fourteen cents a quart on the milk supply of twenty-one hundred families living in the poorest districts of the city. Only families with at least two children were considered, for it was obvious that any curtailment in milk consumption would have its worst effect on such groups. It was estimated by Miss Gillett that these families required 8,149 quarts of milk daily. In 1916 these families were actually receiving 4,797 quarts daily, more than half the required amount; but in 1917 they were purchasing only 3,193 quarts daily, a little more than a third of the required amount. The number of families getting less milk was 1,480, about seventy per cent of the total number. Most of these families reduced their milk supply from twenty-five to seventy-five per cent, while 121, nearly ten per cent eliminated milk entirely. Of the 1,480 families buying less milk, 1,213 were substituting tea and coffee.

The effect of the increase in the price of milk, which incidently was less marked than in the case of other commodities, had a most serious effect upon families of limited means. It was at that time the verdict of the Health Department that the curtailment of milk consumption throughout the city had a marked effect upon the death of infants from summer complaint and on the nutrition of all growing children.

The New York Association for Improving the Condition of the Poor undertook recently to assist families of limited means to secure good milk at lower prices by selling at one of its food stores loose or dipped milk. While the price was ten cents a quart, eighty quarts of milk were sold daily, but when the price rose to eleven cents, the sales fell to forty quarts daily. This is simply added testimony to the fact that in families of limited means this important food, after it reaches a certain price level, is put in the class of a luxury rather than remaining in the class of an essential where it properly belongs.

Poverty Lowers Other Standards

But defective nutrition is due not merely to a lack of food or to an improper selection of food. Clinical experience with undernourished children indicates that an unregulated diet, bad hygienic habits, uncorrected physical defects, such as diseased tonsils and adenoids, chronic indigestion and other ailments, prevent children from making normal gains. Here, we are in a twilight zone. It would be far from the truth to assume that such conditions, springing as they usually do from neglect and ignorance, are found only in the families of the poor. There ought to be no doubt, however, that they are more prevalent among economically submerged families than among those of adequate income. Inadequate provision for medical care, overcrowded and unsanitary apartments are, however, in most cases the result of insufficient income and these conditions are responsible for many of the physical ailments and defects which have an unfavorable effect on the child's nutrition. Chapin found that in families whose income was less than $800 a year the provision for medical attention was inadequate. So clearly is this inadequacy recognized that the program of health insurance whereby industry, the community and the worker himself each share the cost of this service, is recommended by most social workers who are at all familiar with the problem.

The housing standard of the family, which have obviously close bearing on its physical condition, are almost entirely the result of economic pressure, though of course ignorance and shiftlessness play their part. Several English studies have indicated that malnutrition increases in a direct ratio with over-crowding. By this, we must not be led into believing, however, that over-crowding is in itself solely responsible for the poor nutrition of such children, but rather we must regard the overcrowding as an index of the poverty of the family which in turn is largely responsible for this poor nutrition.

So far as poverty both directly and indirectly is the cause of mulnutrition the logical step is the improving of the economic resources of all members of the community who are now unable to maintain an adequate standard of living. Various reliable estimates are available as to the annual income necessary to provide a minimum standard of living consistent with health and efficiency. The careful work of Chapin led to the rather general acceptance of the standard which he deemed essential. His conclusion was that an annual income of between $850 and $900 was necessary to support a normal family of five individuals decently. In the twelve years that have elapsed since that estimate was made, however, the cost of living, according to the most conservative estimates of the United States Department of Labor have risen at least eighty per cent. Translated in present day terms this would mean that the minimum living cost for a normal family is between $1,500 and $1,800.

Current Rise in Wages and General Standard of Living

The question has frequently arisen within the past three or four years in view of the unusually increased wages, as to whether the standard of living of workingmen had actually improved during the period of the Great War. The estimated of the United States Department of Labor would indicate, however, that real wages, which represent nominal wages divided by the cost of living, have made little if any advance and that in many industries they have actually decreased. According to the Labor Department of New York State, during the greater part of the Wars 1917 and 1918, the average weekly earnings in New York factories have not kept pace with the rise in the cost of food. The indexes of food costs and labor costs did not meet until February, 1919, and since that date there has been a slight gain of food costs over wages.

We must not, therefore, be too optimistic when we hear of carpenters getting $6.00 a day where formerly they got $3.50 and $4.00 a day. This an increase of fifty per cent in wages, while the living costs have increased since 1914 eighty per cent. In spite of the fact that such workers are securing larger wages than they ever received before, they are inadequate to keep pace with living costs. Their economic condition is no better than it was before the war.

There is considerable indication, however, that in the skilled trades, particularly those which are well organized, there has been a definite gain of wages over living costs which ought eventually to result in an actual rise in the standard of living among these groups. Among the more poorly paid groups the great class of unskilled workers, increases have not been so marked, but of course, living costs have risen at the same rate with them as with other groups.

I realize that there is little which the members of this conference can do to raise the general economic standard of the community. As citizens, however, they can do much in insisting on the rights of labor to organize for their own protection and to bargain collectively for the price of their labor. As citizens and as social workers they can insist on adequate provision for the education of children and on social insurance to protect the workers against illness, accident, death and old age. As social workers they can make all their schemes for immediate aid fit into the larger plan for the complete economic adjustment of all classes toward which all democracies are striving.

I should not wish to appear, in stating the problem as I have, to discourage the various educational and public health programs which are now being directed to the problem of malnutrition. Nutrition clinics for the medical supervision of children who are so badly under-nourished as to require medical care, facilities for the removal of physical defects which retard nutrition, nutrition classes run both in connection with

nutrition clinics and with the public school, medical inspection of the school children, the work of the dietitians in collaboration with relief workers—all these movements are sound and are destined to make telling attacks upon those elements of the nutrition problem which are retarding so many children in their growth. The New York Association for Improving the Conditions of the Poor has itself been a pioneer in this kind of work. It has a staff of dietitians who are carrying over the families under its care the elements of practical food economy. In one section of the community where it is doing an intensive piece of comminuty health work it is now operating five nutrition classes and plans are being made for the "nutritional guidance" of all under-nourished children of whatever age, who are discovered through its clinics and nursing staff.

Our brief survey has shown that a long period of economic insufficiency has the effect not only of reducing the food supply but in establishing food habits and hygienic standards which themselves militate against the nutrition of growing children. Even if it were possible to assure a competency to every workingman's family a great amount of work would still need to be done in the caring for physical defects and in inculcating an elementary knowledge of food values among the various groups of the population, particularly among those who have not had the advantage of acquiring such knowledge. The task of improving the economic conditions of all our workers and of combatting the ignorance and apathy which now handicap them, must go hand in hand. The greater task, that of raising the economic standards, will in all probability not be accomplished for many years, perhaps for a generation or two. The application of the other intensive work can be applied immediately. Real progress will not be made unless all of the factors in this problem are kept clearly in mind and unless in providing for the immediate remedies we do not lose sight of the great economic adjustments which are necessary to make possible adequate living standards among all elements of the population.

The Provincial Board of Health of Ontario

Venereal Diseases reported by Provincial Laboratories, June, 1920

Syphilis	169
Gonorrhoea	34
Chancroid	Nil.

Cases and Deaths of Communicable Diseases reported by Local Boards of Health for the Month of June, 1920

COMPARATIVE TABLE

	June, 1920		June 1919.	
Diseases	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*
Small-pox	349	0	68	2
Scarlet Fever	371	12	310	6
Diphtheria	342	45	273	27
Measles	3,613	22	104	0
Whooping Cough	151	15	63	2
Typhoid Fever	31	12	22	7
Tuberculosis	220	184	228	183
Infantile Paralysis	2	1	7	5
Cerebro-Spinal Meningitis	..	9	4	4
Influenza	39	29	..	165
Influenzal Pneumonia	..	10		
Acute Primary Pneumonia	..	260		
	5,118	599	1,079	401

Venereal Deseases reported by Medical Officer of Health

	June 1920.	June 1919.
Syphilis	169	108
Gonorrhoea	183	184
Chancroid	4	10
	356	272

NOTE:—3 deaths from Syphilis.

The epidemic of measles the Province has had for the last six months is on the increase. The 3,613 cases reported for June are the second greatest number recorded in any month with the exception of the month of March 1916 when the cases at that time were over 5,000 with 47 deaths. It is satisfactory to know, while the cases for June is the greatest for any month this year the deaths are only 22 compared with the previous month when 46 deaths occured out of 2,264 cases.

Small-pox is again on the increase in the Province, as indicated by the reports made by the Secretarys of Local Boards of Health. In the month of April there were 305 cases—May 290 and June 349 with no deaths.

Diphtheria cases reported show a decrease of 32 with one death less than for May.

The reports of Scarlet fever gives 12 fewer cases with 2 more deaths.

The Provincial Board of Health has lately felt that all cases of venereal diseases have not been reported. It is thought that this is due partly to carelessness by the medical profession and partly to some of its members not being familiar with the regulations concerning these diseases. It is extremely important that all cases of venereal diseases should be reported. The Board intends to establish clinics throughout Ontario for the treatment of these diseases and unless fairly accurate figures concerning their prevalence are obtained the establishment of such clinics will be seriously hampered. For the information of those medical men who are not familiar with the regulations the Board desires to state all cases of syphilis, gonorrhoea and chancroid are reportable by number though not by name on special printed forms supplied by the Provincial Board. Every local medical officer of health should have these forms available. Each case should be reported to the local Board of Health by serial number as soon as a definite diagnosis is made. The Provincial Board should be notified weekly by the local Boards of Health. It is only by the closest co-operation between the medical practitioners, the local Boards of Health and the Provincial Board of Health that accurate figures can be obtained.

News Items

To encourage study of the means for the prevention and cure of tuberculosis, the Hennepin County Tuberculosis Association of Minneapolis, Minn., announces that it has set aside a fund for the support of a tuberculosis research fellowship in the Graduate School of the University of Minnesota. The candidate for the fellowship must be a graduate of a Class A medical college. He will be expected to devote himself to research in some problem concerned with the causes, prevention, or cure of tuberculosis. No teaching or other service will be required. The fellowship yields $750 the first year and progressively increasing amounts to be appropriated for the second and third years as conditions warrant. Inquiries and requests for application blanks should be addressed to the Dean of the Graduate College, University of Minnesota, Minneapolis, Minn.

Dr. D. A. Craig, for five years medical superintendent of the Queen Alexandria Hospital, London, Ontario, and during the war consultant in diseases of the chest for Military District No. 1. of the Canadian Army, has been appointed tuberculosis examiner by the Massachusetts-Halifax Health Commission, and on the 15th inst; took up his residence in Halifax.

Dr. Craig will give his entire time to tuberculosis work and in other educational phrases of public health contemplated by the Massachusetts-Halifax Health Commission. He will supervise the three tuberculosis clinics being organized in the Health Centres and serve as a free tuberculosis consultant to physicians in Halifax and Dartmouth.

The Executive Officer has also announced the appointment of Dr. Gordon Wiswell as the physician to be immediately in charge of the pre-natal, baby, pre-school age and malnutrition services in Health Centre No. 1, now conducted in Old Admiralty House; and of Dr. Hugh W. Schwartz as the physician immediately in charge of the nose and throat services. Dr. M. J. Carney, who organized the first tuberculosis clinic in Halifax, will continue in charge of at least one of the Health Centre tuberculosis clinics.

The Commission recently announced the names of a consulting staff, who will co-operate with Dr. Royer, the Exectuive Officer, in determining the policies in Health Centre work. Their names are as follows:—Col. John Stewart, Dean of Dalhousie Medical School, Dr. Frank Woodbury, Dean of Dalhousie Dental School, Dr. Arthue Birt, Dr. George M. Campbell, Dr. S. J. McLennan, Dr. R. Evatt Mathers.

Miss Voilet Trench, a well-known member of the panel of lecturers for the British National Council for Combating Venereal Diseases was a guest of honor at a luncheon organized in Toronto on August 3rd by the Canadian National Council for Combating Venereal Diseases. Miss Trench described the progress of the attack on venereal diseases in Great Britain and in describing her own work put a great deal of emphasis on the necessity for undertaking social and educational methods of a constructive sort.

Dr. J. G. Fitzgerald, Honorary Advisor to the Red Cross Society for Canada has returned from a trip through the Western provinces where he addressed numerous meetings organized by the Red Cross on the subject of "The Peace Time Programme of the Red Cross".

At the Annual Meeting of the Canadian National Council for Combating Venereal Diseases, held in Vancouver in June, various important amendments were made to the Constitution making it possible to undertake campaigns for members on a small fee basis. In future all Provincial Chairmen will be members of the Executive Committee. Newly elected members are Dr. J. A. Baudouin of Lachine, Quebec, and Major Fred. Smith of Toronto. Provincial Committees have been organized in Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia while it is understood that in the remaining provinces committees are in process of formation.

The continuance of the work of the Canadian Red Cross Society as a peace-time organization, in accordance with Article 25 of the Covenant of the League of Nations, "for the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world", has made it necessary to re-organize the staff of the Society.

Lieut.-Col. Noel Marshall, who has devoted all his time to Red Cross work since the outbreak of war, remains as Chairman of the Central Council, resigning his position as Chairman of the Executive Committee Mrs. H. P. Plumptre, who acted as Honorary Secretary throughout the war, has given up that position to devote her time to the development of the Ontario Division.

Dr. James W. Robertson, of Ottawa, has been appointed Chairman of the Executive Committee, and Dr. Albert H. Abbott has been appointed General Secretary.

The Peace-time work of the Red Cross Society will be, as the above quotation from the Covenant of the League of Nations indicates, in connection with public health. The Society will act in the closest Co-operation with the Provincial Departments of Health, and will supplement the activities of these Departments where it is considered advisable, at the same time maintaining its standing as a purely voluntary organization, in no sense subordinate to Government agencies. As a beginning in this service, Professor J. G. Fitzgerald, of the University of Toronto, has been appointed Honorary Adviser on Public Health, and Dr. Ruggles George has been appointed Director of Information on Public Health.

Editorials

The Abolition of Franking Privileges

THE announcement that in the very near future all franking privileges now enjoyed by the Provincial Boards of Health in Canada will be done away with is of more than passing interest to public health workers. Franking privileges have in the past covered the mailing of a variety of returns. Examples are forms from physicians to Division Registrars and from householders reporting births and deaths, returns from clergymen reporting completed marriage licenses and from Division Registrars covering marriages, returns to Medical Officers of Health and Municipal Clerks, reports of physicians notifying communicable diseases including Tuberculosis and Venereal Diseases, reports of burials by undertakers—as well as the transmission of the aforenamed reports to the Dominion Bureau of Census of the Dominion Government. With the exception of annual reports all franking is upon material which under arrangement with the Bureau of Census and the Dominion Department of Health are supplied to these respective Departments of the Federal Government.

The abolition of franking privileges upon the foregoing class of reports will in the opinion of the Public Health Journal be followed by disastrous consequences. The services given by physicians, clergymen, division registrars and undertakers is almost entirely voluntary and it would seem absurd to even try to compel the payment of postage in addition. Such an attempt will simply result in an immediate damage to the entire machinery of reporting which will be difficult to repair. The Provincial Boards, the Dominion Bureau of Census and the Dominion Department of Health will feel the immediate results. A disturbance of public health machinery, however, ultimately reacts on the people and this is the serious part of the matter. It is to be hoped that every step will be taken to persuade the Dominion Government that the contemplated action is absolutely without justification.

Public Health Education at Dalhousie University

IN connection with a campaign for funds to enlarge and extend the activities of Dalhousie University, the University authorities have been greatly encouraged and gratified by the announcement of gifts of a half million dollars each from the Carnegie Corporation and the

Rockefeller Foundation. These magnificent contributions are for the medical school of the University, which has been bravely carrying on in the face of many difficulties, and rendering a service to the people of the maritime provinces which would have been quite impossible were it not for the unrewarded devotion of the greater part of its teaching staff. The generous gifts which have just been received will permit the University to enlarge greatly the laboratory facilities of the medical school, to increase considerably the number of full-time teachers, and otherwise to strengthen the course in medicine. This in itself will be a distinct gain for the cause of public health in the province by the sea, as the more thorough the training of physicians the greater will be their success in conserving life and health.

It is, however, of particular interest to public health workers that a joint memorandum of the donors indicates very clearly that the University is expected to stress the teaching of public health, and it cannot be doubted that this evident wish of the donors will be fully met. Dalhousie has already inaugurated a course in public health nursing, open only to graduate nurses of good education and training, for which a very complete and practical curriculum has been laid down. This may be taken as an assurance that the University has already committed itself to a broader consideration of the health needs of its constituency, and doubtless a course leading to the D. P. H. will eventually be established.

The Dalhousie medical building is immediately adjacent to a singularly compact group of hospitals—the Victoria General, Children's, Maternity, Civic Infectious and (in course of construction) Tuberculosis—and also to the City Home, where numbers of persons suffering from chronic ailments are always to be found. When a proposed new structure, specially designed to serve as out patient departments to these various institutions, and also as a health centre in the broadest sense of the term, has been added to this group. and when the laboratories have been extended on accordance with present plans, Dalhousie will not only have unusually good facilities for clinical teaching but very exceptional opportunities for the most practical kind of instruction in public health work. The future of both curative and preventive medicine has thus been made extremely bright for the maritime provinces, and we confidently predict that a very few years will witness the development of a centre of medical education in Halifax which will rank well with similar centres elsewhere. A new day has dawned for public health work in the eastern portion of the Dominion, and all who are interested in this phase of human betterment will keep a keen eye upon the progress which will be made under the stimulus of these splendid benefactions.

Book Review

To-day's World Problem in Disease Prevention—Syphilis and Gonorrhoea, by John H. Stokes, A.B., M.D., Chief of the Section of Dermatology and Syphilology, the Mayo Clinic, Rochester, Minn., Assistant Professor of Medicine, Mayo Foundation Graduate School, University of Minnesota.

This book by Dr. Stokes is probably the most remarkable book as yet produced on the subject of venereal diseases. Written during the war at the instance of the Council of National Defence of the United States, it has been published for educational purposes by various State Boards of Health, and recently has been published and distributed to physicians and public-spirited laymen by the Provincial Board of Health of Ontario as a part of its campaign against venereal diseases.

Dr. Stokes combines scientific knowledge with a strong social point of view to an unusual degree. Known widely for his academic and clinical qualifications, he writes with accuracy and charm as well as an enthusiasm which will do a great deal to interest readers throughout the country in venereal diseases as the greatest of all public health problems.

The part of the book dealing with the more definitely medical aspects of the problem will repay the perusal of any physician. At the same time, even this section of the book is written in such simple language that anyone should be able to understand the essential facts of the disease from the standpoint of either prevention, prevalence, infectivity or cure.

The chapters dealing with the social, psychological and economic background of syphilis and gonorrhoea are full of facts of the greatest interest not only to physicians, but to the economist, the sociologist, the psychiatrist the legislator and public spirited layman alike. Chapters in this section deal with the public viewpoint, normal ideals of sex life—abnormal checks on marriage—the trend of the times towards laxity—the influence of the war—prostitution—alcohol and the genital infections, moral and educational prophylaxis—public health control—personal prophylaxis, etc.

To quote from the preface: "There is no device known to a cruel, unscrupulous and implacable opponent which has not been used against us by the twin scourges. They have crept into our

houses and murdered the innocent and helpless. They have appeared to many a sincere well-wisher of mankind not in their true semblance of brutal, wanton and savage mutilators and destroyers, but in the disguise of well-wishers, guardians of the moral life, painful but just chasteners of iniquity. Many a sincere but uninformed or unthinking man or woman has shuddered to think that these things must be, and yet feared to protest against them, refused even to know about them, lest with one horror removed or explained away, they should confront a worse one. We have lived the nightmare of one who dreams that his awakening will be his death, and dares not open his eyes."

But we need not continue. Dr. Stokes is right. The only advice the reviewer can give to the readers of THE PUBLIC HEALTH JOURNAL, who has not read this book, is to procure it at once and read it from cover to cover. If, when this task—if task one can call it—is completed, he is not at once enlisted as an enthusiastic recruit in the campaign against venereal diseases prepared to carry on to the bitter end—well—to say the least, the aforesaid reviewer misses his guess. G. B.

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The Role of the Laboratory in the Control of Venereal Diseases

By R. H. Mullin, B.A., M.B.

Director of Laboratories, Vancouver General Hospital. Professor of Bacteriology, University of British Columbia.

Read at the Annual Meeting of the Canadian Public Health Association, Vancouver, B.C., June 21 and 22, 1920

In considering the relationship which the laboratory bears to the control of any communicable disease, it is necessary to have a clear conception of what the word "control" embraces, and to be familiar with the general principles upon which are based efforts at control of all communicable diseases, together with such special features as may apply specifically to the particular diseases in question due to inherent peculiarities. It is generally accepted that communicable diseases are caused by micro-organisms, that the only mechanism existing for the spread of these diseases is the transfer of virus laden discharges from the infected to the healthy, and that to a certain extent the virulence of the virus will depend upon how fresh the discharge is.

Until very recently efforts at "control" of communicable diseases were almost altogether applied in the direction of endeavouring to prevent their spread. This is generally conceded to be a function and duty of the community, federal, provincial, county or municipal governments each bearing a certain responsibility for providing as much protection against epidemics as the citizens are willing to pay for by suitable appropriations made by these various governments. Later thought is beginning to indicate the possibility of an additional function of the State. If the individual citizen is looked upon as one of the assets of the state, the value of which depends upon his productivity, then it becomes a function of the state to conserve and preserve such assets by providing such facilities as will keep that individual at his maximum productivity for the longest time. The state is considered to have, if not the entire responsibility for, at least an interest in the health of

each individual citizen. If such reasoning be accepted, then treatment and cure, in part at least can be considered a community responsibility. "Cure" up to the present at least in most communicable diseases, has been a matter, individual and voluntary, with no compulsion save as regards dependents. "Prevention" is undertaken as community effort, demanding compulsion upon the individual, restricting where necessary his personal liberty and movements in the community for which legal mechanisms and police power are required.

In control (both prevention and cure) of any communicable disease, the laboratory has certain definite functions and equally definite limitations—the latter being more readily acknowledged by the laboratory worker than appreciated by the clinician who is only too apt to view it as an instrument of unfailing precision. It must be recognized that the laboratory cannot always give a definite answer to every question. Theoretically, it should be able (*a*) to identify or discover the causative agent for each disease, (*b*) to determine which tissues are apt to be infected with the organism, (*c*) to determine in what discharges the organism leaves the body of the infected individual, (*d*) to determine the duration of life as a parasite of the organism, (*e*) to determine who are immune, (*f*) to produce biologic products for inducing immunity or cure, (*g*) to produce chemical products for killing the organism in the infected host. How far can these be applied to the venereal diseases and to what extent do these diseases differ from communicable diseases in general?

A study of "Venereal Disease Acts" recently passed in Canada reveals startling features, some of which indicate a decided advance in methods of control especially if their principles can be applied to other infectious diseases. Venereal diseases are the only communicable diseases against which the Federal Government has made an active campaign in money appropriations. Against them are certain restrictions which go far beyond what obtains in other diseases. In all the acts relating to them there is a clause prescribing a fine or gaol penalty for anyone who "commits any act which leads or is likely to lead to infection of another person". There are like penalties for refusing to take or continue treatment. This puts a new responsibility upon the infected and this legal aspect entails the greatest necessity for legal exactitude in addition to scientific accuracy of all data upon which these penalties are sought to be exacted. In these acts the "quarantine" period is not definitely stated in days.

There are other peculiarities, one of which has a direct bearing upon the role of the laboratory. For practical purposes, direct and immediate contact is the only method of spread that needs any consideration.

In syphilis the causative organism has been discovered and certain points for its identification determined. It has been demonstrated in practically all of the tissues and the fact apparently determined that this organism does not appear to have a definite tissue of election—although a preference for certain tissues seems to be exhibited at various stages of the disease. It has been proven to be present and infective in certain exudates, those from open lesions in the skin and mucous membranes, thus definitely fixing such exudates as the most probable and prolific sources of infection. It has not been found in the ordinary dejecta from bowel and bladder; nor in the semen of a latent syphilitic, so that these are improbable but not impossible sources of contagion. In acquired syphilis, the open lesions are the greatest source of contagion. When the spironema is demonstrated and proved in them, it definitely establishes the case as one of lues—to that the laboratory in such cases is of use in establishing the presence of the disease. The reverse is not true, failure to find the organism does not necessarily or even probably rule out the possibility of its being present. A negative cannot be used to determine the non-infectivity of the supsected individual. The "two successive negatives" principle used in diphtheria control is of no value in lues. So far as the organism itself is concerned, the greatest field for the laboratory lies in an extended and successful study of its biology. Many facts concerning its life history are lacking, facts necessary if the pathology and course of the disease is to be understood and the treatment and control scientifically applied.

Up to the present no method has been found for definitely and surely determining when the spironemata have been killed in an infected individual. Some believe on various grounds that "once infected, always infected". On the other hand the clinical course of the disease following certain lines of treatment seems to indicate in some cases that the infecting organism has been killed. This is born out by many vital tests where "successfully" treated individuals have married, and produced children without infection of the other parent or child, indicating at least that the previously infected individual had been rendered non-infectious.

During the last few years, great reliance has come to be placed, as a guide to treatment, on a certain serological procedure called a "Wasserman Test". In the first efforts at control it appeared to be an excellent method for determining a cure and hence for establishing the period of infectivity. Unfortunately its value is not so great as at one time surmised, especially when the idea of using it as a mechanism for control or as a basis for deprivation if individual liberty or other penalty is taken into consideration. For such purposes any test must not only be scientifically accurate, but legally sound. In this respect the so-called

Wasserman test has certain inherent defects, which are not of such great importance when "cure" alone is considered, especially when cure is considered a process purely optional with the individual. In the first place the name does not denote a single procedure but a considerable number of varying procedures, each variety being adopted by certain groups of workers as appearing to give the most accurate results. The fact that greater accuracy is claimed by competent observers for each of certain methods, establishes the fact that the results obtained by all the methods in use are not identical. There is no uniform standard technique in Canada but each laboratory adopts the particular variation which appears at the time best. This will surely lead to serious complications from a control standpoint. The Federal and all the Provincial Governments are making serious efforts at control, but if any reliance is to be placed upon this test, uniformity of technique is essential. Otherwise, a syphilitic individual travelling from Halifax to Vancouver might be placed in the situation, embarrasing alike to himself and all the Governments, of passing through an alternating series of relapses and cures, the number and duration of which would depend solely upon the number of stops and rapidity of transportation. If the complement fixation test is to be employed at all in the control of syphilis, it is essential that a standard technique be employed in all laboratories supplying data to be used in this control. In addition to this standard, each laboratory could, of course, use any variation which appeared to each desirable. The enunciation of such a standard might well be undertaken either by this Association through a suitable committee, or by the Federal Department of Health.

From a legal aspect, this test has another defect since it must be remembered that in attempts at control of this disease, the probability of encountering an astute adverse lawyer, guided by an unscrupulous medical adviser is not without the bounds of possibility and that most people will fight vigorously for both personal liberty and monetary property. The legal soundness of the test must be fully established. Unfortunately it is an empirical and not a specific test ("specific" in the bacteriological usage). The antigen employed bears no relationship whatever to the causative organism; in fact it is frequently produced from the tissues of animals considered immune. The results obtained with the antigens ordinarily employed differ greatly from those obtained from the spironema, a fact difficult to explain either before a body of scientific men or a judge and jury.

This test is not absolutely accurate in either direction. Positive results have been obtained in certain diseases, such as lead poisoning, yaws, etc., where syphilis could be definitely and certainly excluded, so that a positive result does not always spell lues. On the other hand,

some cases of undoubted and uncured syphilis will give a negative result, especially following certain drugs employed in treatment and of greater importance from a control standpoint, following the use of alcohol. That alcohol vitiates a negative result is so well known that patients are warned not to imbibe for three or four days before the examination. It will not take long for this fact to have general circulation among the laity, the unscrupulous of whom will interpret it backwards—"If you want a negative, get drunk before the test". This will not always work, but it is a danger that cannot be overlooked. Cases of the opposite kind are not unknown, the so called "Wasserman fast" cases where the continued application of arsenic produces no change at all in the reaction but only an arsenical poisoning. Is the state to impose a penalty for refusing to continue treatment in such true cases? What would probably be the ruling of the court if a dishonest person pleaded fear of arsenical poisoning as a reason for refusing treatment?

Again certain variations in results have been obtained under altered conditions. It is realized that in certain cases the intensity of the test may change from day to day through a considerable range for no apparent reason. This is a fact for which no sufficient explanation is as yet available. Variations occur depending upon the body fluid examined. In numbers of cases the spinal fluid will be positive while the blood is negative. Will the state demand an examination of the spinal fluid in every case of syphilis? It must be remembered that lumbar puncture is a surgical operation not without danger in the hands of those unaccustomed to the procedure and frequently attended with considerable pain. It certainly should not be compelled in every case until the state is able to guarantee, by the provision of sufficient experts, that the danger of the operation has been eliminated. Variations in interpretation of results obtain, particularly in cases that have been under treatment, depending upon the time at which the treatment was begun in relation to the stage of the disease. A negative test, obtained in a case in which adequate treatment was begun, soon after infection during the primary stage has a significance, different from one in which the same treatment was not begun until after secondaries had appeared.

Taking all these factors into consideration, it is clear that valuable as the complement-fixation test may be as a guide to treatment, it, by itself, is of very much less value for control purposes. Until further and more accurate data are collected, the clinical signs in syphilis are of greater value in determining the probable infectivity of an individual. Clinical signs reinforced by laboratory data provide a greater degree of safety but it must be admitted that considerable information must be attained by intensive and co-operative methods before a means entirely satisfactory can be devised. Much of the present opinion regarding the

course of lues depends upon data collected by many different observers using different techniques, both on the clinical and laboratory sides. It is impossible to separate clearly the chaff from the wheat. It would seem a safer and more accurate course to disregard entirely the present statistics and to begin the collection of a new set based upon procedures which are attended with a greater degree of uniformity and accurately controlled. In the long run, such a procedure would undoubtedly conserve time and effort and produce results of far greater scientific accuracy.

In gonorrhea, the position is in some respects better. Knowledge of the biology of the organism is of very much wider range. Laboratory cultivation of the organism is much more easily attained. Difficulties in making a diagnosis by laboratory means in acute cases are practically nil, but mechanisms for determining the period of infectivity are very uncertain. Whether or not there is a "latent period" in gonorrhea is a very important point yet to be determined. In the regulations of some localities, two negative smears and absence of discharge are spoken of for the release of the individual. Undoubtedly in females such a procedure is attended with considerable inaccuracy, especially in those cases most anxious for a clean bill and most dangerous to the community, of prostitutes, acknowledged or clandestine. How easy for them, with the assistance of an unscrupulous physician, to obtain a release in the face of manifest lesions. In such cases, it would appear imperative that the taking of such specimens should be in the hands of the properly constituted health authorities. It is impossible however to legislate against any one class in a community so that a very difficult problem is presented since many a woman not a public prostitute will undoubtedly object to such an examination by a public official. Unfortunately the complement fixation test in this disease is not on as firm a foundation clinically as in syphilis in spite of the fact that specific antigens are available. From information at present at hand few would advocate its use as a basis for control.

In both diseases the laboratory has a very important and much needed function of investigation. Much remains to be learned. The biology of both organisms requires further elucidation. A satisfactory method of immunizing and determining the presence of immunity is needed. Biological preparations for treatment are still for the future. Although brilliant results have been obtained with the arsenical preparations at present in use, none would pretend that the goal in this line has been reached. Most of all, for the purposes of control, an accurate and sure means of determining the end of the infectious period is urgently demanded.

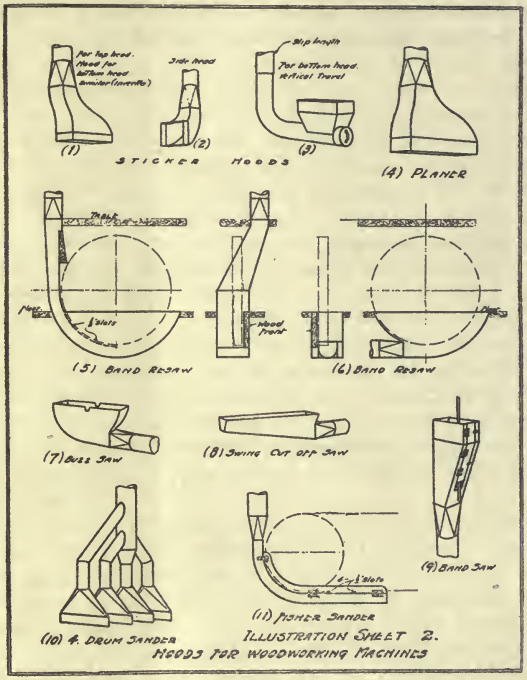
Many doubtless, at first thought, would consider the laboratory with its present facilities the corner stone upon which those efforts at control

necessitating the utilization of police power should be based. More progress will be made if its limitations are clearly recognized by those in whose hands the guidance of these efforts is placed. It must be recognized that in spite of the brilliant results that have been attained in the biology, serology, and therapy of these diseases, laboratory methods alone will not give an infallible answer to the all important question "when is this individual who has been infected safe to return to the full and unrestricted exercise of his citizenship?" With the knowledge available the answer can be only tentative and none too positive. Such as it is, it should be founded upon clinical observations reinforced by the intelligent interpretation of laboratory examinations. This entails, for the greatest degree of accuracy, the closest and most cordial co-operation between these two branches of the service.

Industrial Dust

(Continued from our last issue).

The variety of hoods used in connection with wood-working machines is so great as to make it possible to mention only a few of the most important in this paper. The proper form, proportion and construction of these hoods is a subject very difficult to deal with on paper, as each particular machine differs from machines made for the same purpose by other manufacturers.



On Illustration Sheet No. 3 is shown the regular form of sweep-up as used for collecting the sweepings from the floor of a woodworking factory. The first illustration shows the type of sweep-up used when a branch pipe is overhead. The second illustration shows the type of

sweep-up used when the exhaust pipe rises from the floor below. On this sheet is also shown an illustration of ball and socket joint, blast-gate, butterfly dampers and quadrant dampers.

There has been considerable discussion in the past as to the merits of what is known as double hoods, which consist of really one hood inside of another, as shown at "A" and "B" illustration sheet No 4. The object of the double hood is to concentrate a suction at the edges of the hood the theory being that, by creating a high suction at the four

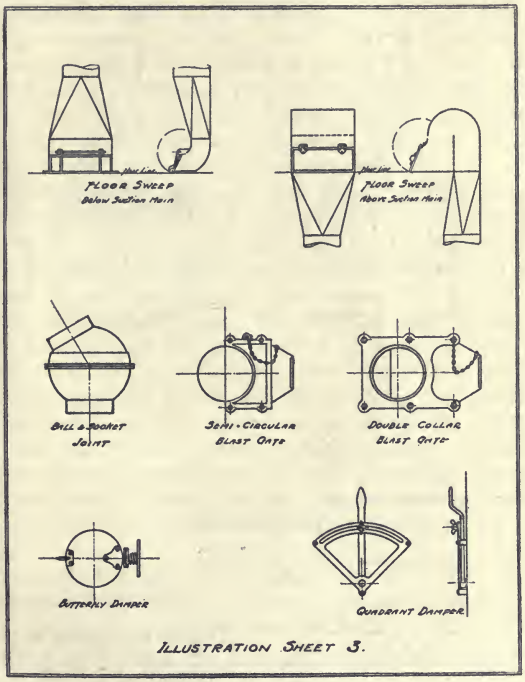


Illustration Sheet 3.

edges of the hood, a strain of high velocity air would surround the vat or tank and prevent the escape of objectionable dust or steam. The direction in which the air is supposed to flow with a hood of this kind is shown at "A." The direction which the air actually takes is shown at "B." Experience has taught that with this type of hood the thin strata of high velocity air which is supposed to extend from the hood to the edge of the tank is actually lost within a few inches from the edge

of the hood. In other words, following the line of least resistance, the air enters the hood in a horizontal as well as a vertical direction and within a foot of the edge of the hood it is impossible to detect any movement of air. The result is that in the event of steam rising from a kettle it will rise directly from the centre of the boiling liquid and, owing to the restricted opening at the top of the double hood, it will be crowded in the hood and much of it will escape into the room as shown at "B." The most satisfactory arrangement for carrying off fumes of this kind

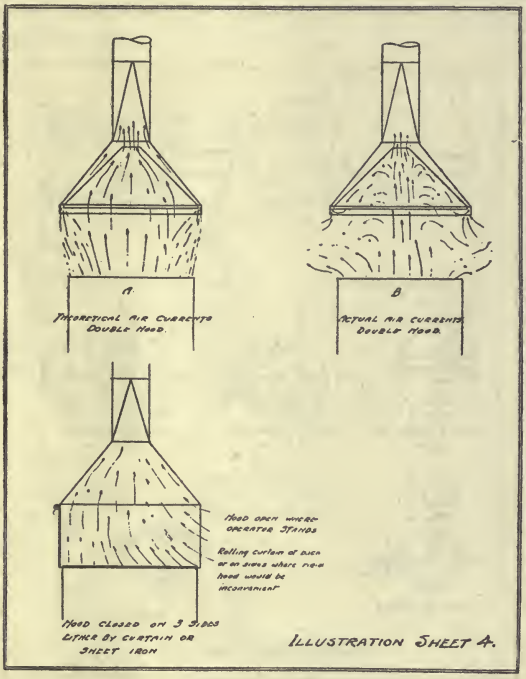


ILLUSTRATION SHEET 4.

is shown at "D," where a single hood is used, the sides being brought down to the sides of the tank and one side only left open for the entrance of air. The open side should be the one where the operator stands so that fresh air entering the hood will flow over him on its way into the hood. In some cases, where it is impossible to close the rear of the hood off with sheet metal, a curtain can be used similar to an ordinary window blind, but made on a stronger roller so that it can be pulled down to

enclose the space or run up out of the way when it is necessary to work from that side of the tank.

On Illustration Sheet No. 5 is shown a general arrangement of a system for exhausting the dust from the scutching machines, tow dusters and brakes in a flax mill. The flax industry is comparatively new in Canada, and as the process is a very dusty one it is necessary that the machines be connected with a proper exhaust system. This illustration sheet also shows the form of hoods and size of branch pipes required with these machines.

On Illustration Sheet No. 6 is shown a typical arrangement of a ventilating system for a linotype room. With an installation of this kind the metal pot on each machine should be connected with a hood 16 in. in diameter at the base, 12 in. in height, and connecting with a 5 in. pipe. The vertical pipe should be fitted with a slip joint and counter weight so that the hood can be raised up out of the way or taken down entirely when it is necessary to adjust the machine.

It is also important in the case of a linotype room to see that the supply fan and exhaust fan are started when the gas jets under the metal pots are first lit in the morning. It frequently occurs that the engineer or janitor at the building lights the gas under the metal pots an hour or two before the workmen arrive in the morning, but does not start the fans until the workmen enter. The result is that, during the time between the lighting of the gas jets and the starting of the fans, the room has been filled with the products of combustion and oxides of antimony and lead, and by the time the men enter the atmosphere is in a very poisonous condition, as the process of keeping the metal in a molten state gives off large quantities of heated carbon di-oxide, carbon monoxide and water vapours which are disengaged by the burning of the gas beneath the metal pots and the movement of the plunger in the metal which disturbs its surface and scatters the dross into the air.

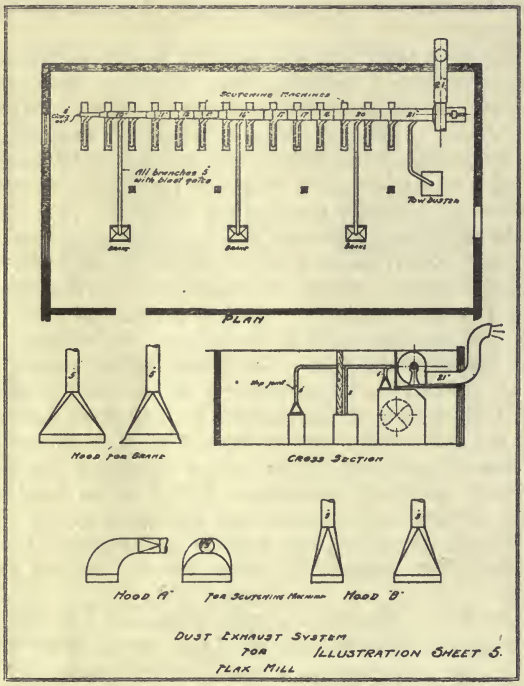
On Sheet No 6 is also shown a supply system for delivering into the room a volume of air slightly in excess of that carried off by the exhaust fan. One of the most common mistakes made in connection with the ventilation of industrial plants is the general impression that an exhaust system is all that is required to produce an ideal condition, whereas when we consider that in the first place an exhaust system to do its work properly must extract from the building a certain definite volume of air every minute, it naturally follows that if the fan actually does what it is required to do, that it would only be a very few minutes before all the air in the building was exhausted, in which case any one of three things would happen, viz:—

1st.—A supply of air at the outside temperature must enter the

building from out of doors in a volume equal to the full capacity of the exhaust fan, or,

2nd.—The capacity of the exhaust fan will be reduced in proportion to the volume of outside air which is permitted to enter, or,

3rd.—If no air from the outside is permitted to enter the building the fan wheel will simply rotate in its case without handling any air.



In summer this condition is not a serious one, but in this country where the winter occupies the greater part of the year it is very important to see that an adequate supply of air at a comfortable temperature be delivered into any room from which air in a large volume is being extracted, otherwise, in the winter months, cold air will enter the building and often times create a condition more objectionable than before any exhaust system was installed, due to the chilling effect of the cold outside air which will condense the moisture in the inside air and produce a condition of fog.

There is one exception to this statement and that occurs where a small department is so situated that it is in communication with a large building. Under these conditions the leakage around windows and doors into the main building may be sufficient to supply the requirements of the exhaust system in the small building without any objectionable reduction in the temperature of the room.

Many exhaust systems have proven absolute failures due to the fan being starved for the necessary amount of air to do the work for which it was installed.

Illustration Sheet No. 7 shows a typical system as used in connection with granite polishing, stone grinding, chipping, etc. On this drawing the necessary dimensions of fans, separators, mains and branch pipes for use with any number of machines from one to ten are shown, and the elevation shows on a larger scale the arrangement of the branch pipes with ball and socket points, counter weights, flexible rubber hose and hoods required.

Hand sandpapering, scraping, certain classes of painting, dusting with powders and small sand blasting can generally be satisfactorily handled by placing in the tables or benches a grating, under which is located a hopper or inverted hood which is connected with the exhaust system. For this class of work the fan should operate at a speed which will develop a velocity of not less than 3,000 feet per minute over the area of the grating.

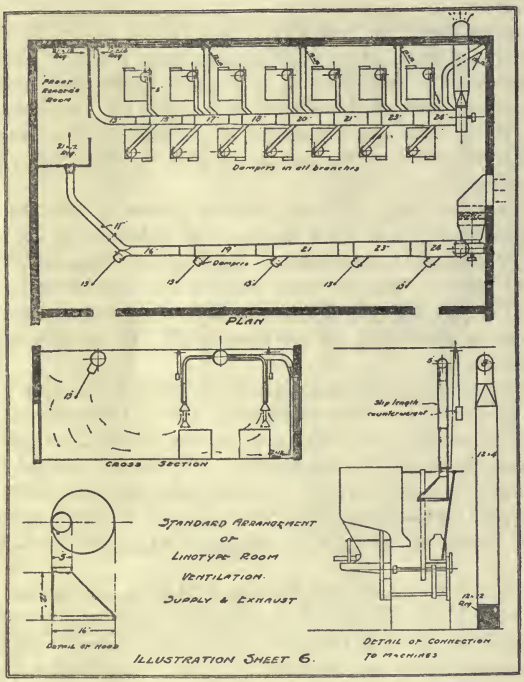
For large sandblasting operations it is necessary to remove the sand which is thrown off from the sandblasting hose. This work can be most satisfactorily handled by locating a grating in the floor and placing the article to be cleaned on the grating. The operator should, of course, be protected by a helmet and a suction equivalent to 3,000 feet per minute should be maintained over the surface of the grating, and proper provision should be made for an adequate supply of air to enter the room.

Care should be taken that the hopper is so designed that the sand dust entering it will not cut off the suction. This can be most readily accomplished by dividing the pit or hopper into several compartments, each arranged with a separate branch pipe, each branch pipe being connected with the main exhaust pipe line. Portable wooden deflectors suspended from the ceiling are of great advantage in deflecting the grains of sand away from the operator.

During the past few years painting, enameling and lacquering by means of spray brushes or atomizers has replaced hand brush work. This operation throws a fine spray or mist into the air and if the solid pigments or the liquid medium which are used are poisonous, it provides a distinct hazard to the health of the workman. Such work should be

performed only under an enclosed hood constructed to suit the size of the work being done, and at the same time to provide ample room for the movement of the operator's arms through hand holes in the side of the hood. As with all other hoods, the conical portion should be located so that the spray from the brush will be directed towards it.

For this class of work a disc or propellor type exhaust fan with direct connected motor is not at all suitable and it will be found that an

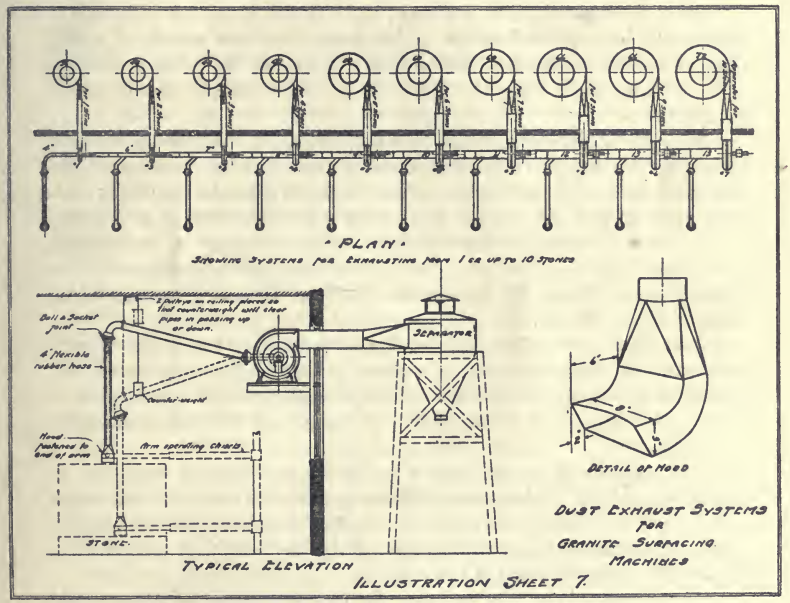


enclosed type of exhaust fan, located some distance from the spray chamber and connected to it by means of branch pipes, will give much better results.

In general a properly designed exhaust system should fill the following specifications:—

The arrangement of piping connecting with the hoods should be so designed as to offer as little resistance as possible. The area of any main duct into which any branch pipes enter, should not be less than the

combined area of the branches entering it plus 20 per cent. Branch pipes should enter the main at an angle of not more than forty-five degrees and thirty degrees or less is desirable. No branch pipes should be attached to the main at right angles. Two branch pipes should not enter the main directly opposite each other and "Y" branches should be avoided, as the two currents in conflict would retard the flow, sometimes causing the pipe to clog. Laps in mains and branches should be made in the direction of the flow of air. Elbows should have a radius in



the throat twice the diameter of the pipe. Hand holes with tight fitting sliding covers should be located in the main not more than 10 feet apart. Each branch pipe should be fitted with a sliding blast gate. Top hoods should be arranged with slip joints and counter weighted. Care should be taken that lint from cotton polishing wheels is not carried in the same main with dust from steel grinding wheels, as a spark from the steel grinders will frequently ignite the cotton dust causing explosion. In the same way care should be taken that fumes or gases from different hoods do not enter a common main where they might chemically re-act on each other and form explosive mixtures.

Acid vapours, such as sulphuric, hydrochloric, hydrofluoric, etc., readily attack iron or galvanized iron ducts and should be conveyed in ducts heavily coated with asphaltum or in lead lined or wooden pipes pitched and joined together with wooden pegs.

A very dependable rough rule for determining the diameter of exhaust pipes connecting with conical hoods is to make the bellmouth one foot larger in diameter than the apparatus it is to cover and to increase this diameter one foot for every two feet elevation above two feet, then to make the pipe one-quarter the final diameter of the mouth as thus determined. For instance, a kettle two and one-half feet in diameter, having the bottom of the hood two feet above it, would have a hood 3.5 feet or 42 inches in diameter and the exhaust pipe for this hood would be one-quarter of this, or approximately nine inches in diameter.

Practically the same results can be arrived at by making the pipe leading from the hood not less than one-sixteenth of the area of the hood at the bellmouth, and this bellmouth should extend six inches in each direction beyond the sides of the vat or apparatus which it is to cover.

Rectangular pipes can be compared with round pipes by multiplying the area of the square pipe by four and dividing by the perimeter of the square pipe. The result is the corresponding diameter of a round pipe for the same velocity.

The friction for varying diameters of round pipes is inversely proportional to their diameter at a given velocity. The friction of rectangular pipes at this velocity varies inversely as the square root of their respective areas. The friction of any pipe is directly proportional to its length.

The velocity of air entering a bellmouth hood over a tank, vat or kettle should not be less than 250 feet per minute over its entire area when located within thirty inches of the top of the tank and this velocity should be increased by 100 feet per minute for every foot above thirty inches at which the hood is located.

In conclusion it is to be regretted that so little attention has been paid to this problem by our universities and professional experimentalists. For generations our leading technical institutions have been experimenting on centrifugal pumps, steam turbines, steam boilers, heating plants and other various lines of useful and economical apparatus for industrial and domestic use and are still doing it, yet it is safe to say that none of them play a more important part in the development of our industries, the safety of human life and the economical production of manufactured goods than the application of fans and blowers to the removal of fumes, vapours, gases and dusts, all of which have been discussed under the heading of "Industrial Dust" in this paper.

Control and Rehabilitation in connection with the Venereal Disease Problem

By Emily F. Murphy

Read at the Annual Meeting of the Canadian Public Health Association, Vancouver, B.C., June, 1920.

ON a poster of the front page of the Social Hygiene Bulletin for April, we find these words, "Public Knowledge will conquer Venereal diseases." It is this dictum which emboldens us to present our personal opinions and experiences on this subject.

Because our experiences in dealing with the sufferers have extended over a c mparatively short period—that is to say less than five years—we feel we cannot speak with the authority that might seem a requirement for a Conference of such importance as this. It seemed to us wise, therefore, in submitting this paper to be read by proxy, to make it more personal and intimate than might otherwise be permitted.

In considering our experiences for this period, the thought uppermost in our mind is, that having framed their laws and established their clinics for the treatment of Venereal diseases, the different Provincial Governments must deal in a like drastic manner with the other twin scourges—feeblemindedness and prostitution—in that these are the cause and source of most infection. Governments must inevitably deal with these two in order that their energies and financies may not be depleted in what is apparently an endless and vicious circle.

Indeed, the more you have to do with these two scourges, the more you are convinced that they are one and the same, for the vast majority of prostitutes are feeble-minded.

It was Dr. Woods-Hutchinson who has caustically, but truthfully, described the prostitute as "a helpless feeble-wit selling her body because she has no brains to sell."

Walter E. Fernald has said that, "Feeble-mindedness is the mother of crime, pauperism and degeneracy. It is certain that the feeble-minded and their progeny constitute one of the great social and economic burdens of modern times".

At any rate, it soon becomes evident to the workers that having rendered the feeble-minded prostitute free from Venereal infection, no Government Health Department can permit her the freedom of the streets to become again infected. There is no doubt that these irre-

formable women must, of necessity, be segregated during the child-bearing period, a plan which has been urged for years by all who have thought closely upon the matter.

This would appear to be a monumental expense but, actually, not so large as the loss that comes from disease, crime, and the conversion of sex-energy into greatly needed social energy. Indeed, morals have been an economic question, and vice has been found to be vitally antagonistic to prosperity and success. Looking at it from this viewpoint, the segregation of the irreformable persons must prove itself a source of cumulative dividends.

F. E. Williams, in *The American Journal of Health*, in an article published in 1916 entitled "Relation of Alcohol and Syphilis to Mental Hygiene", showed that in an investigation in Massachussetts of 100 men who died from syphilitic insanity, that 189 of their descendants were thrown as a charge upon the rate-payers, and that the State paid $39,312 for the care of these patients, and that ten of them represented a financial loss of $212,248.

A young woman under twenty-five years of age, gave evidence this month in the city of Edmonton, that on the night she was arrested, she had sexual commerce with ten men in a certain hotel, and that during the six preceding weeks, she had commerce with between 150 and 200 different men in the same hotel.

Upon examination at the Government Clinic, she was found to be suffering from both syphilis and gonorrhoea. The cost in suffering and the financial loss caused by the promiscous incontinence of this one feeble-minded woman in these six weeks can hardly be computed, for we must consider not only the 200 men, but all those whom they infected in turn.

The whole problem is one of the first magnitude and we feel that the Canadian Committee for the Prevention of Venereal Diseases can best assist the Governments by establishing committees in each province to study these conditions; to report upon them; and to educate the public in order that they may more readily and intelligently co-operate with the Health Department of their particular province.

These Provincial Committees should use every effort to teach the people the direful consequences of these diseases, and that the longer they are concealed, the longer will be the period of recovery. The Provincial Committee should also aim at the raising of the standard of cleanliness, for prevention and cure must be twin sisters.

To this end, better housing conditions with adequate water supplies should be insisted upon. A lower incidence of disease must inevitably result from such improvements.

These Provincial Committees should have sub-committees whose

work it would be to study and report on matters of morale and sexual life, and the responsibility of the home, the church, the press, the hospital, the health officers, medical profession, and police officers to the different problems presented, for unless the Governments secure the co-operation of these classes, their enactments cannot be nearly so effective.

In particular, influence should be brought to bear on all publications to procure their co-operation in suppressing the so-called "jokes" on matters of sex. Probably more than fifty per cent. of all these stupid, wretched witticisms are directed to this subject, thus enormously lowering our standard of morals. Barbellion was wholly correct when he said, "To the enfranchised mind, it should be as impossible to joke about sex as about mind, digestion, or physiology."

The influencing of the press in this behalf may be a slow matter, the idea being a new one to them, but ultimately the ideal will take root and show results.

The Provincial Committees should make it one of their chief aims to strive for uniformity of venereal enactments so that a person cannot escape treatment, or a more irksome treatment, by crossing from one province to another. They should strive that all Departments of Health should have the power to quarantine persons infected until the period of infectivity has passed. And yet, not realizing the loss in human efficiency, and the consequent monetary loss, all our governments are half-hearted, or only slightly concerned.

Our Provincial Governments should provide means whereby every infected person may secure the best modern treatment, irrespective of his or her financial status, and should also make it mandatory that all irresponsibles who do not apply shall be treated under the force of the law.

Another work for the Provincial Committees, or its sub-committee, is placing before the public the necessity of maintaining the most stringent and repressive measures over the liquor traffic, in that the terrible incidence of Venereal disease is largely attributable to intemperance. One does not need to be a physician or a police-magistrate to know that organized prostitution and the infection of drunken men cannot be maintained to the same extent where the traffic in intoxicants has been abolished.

In our contact with this disease one of the painful facts that is daily brought before us, in both the Police and Juvenile Courts, is its terrible prevalence among entirely innocent persons. An example of this occurred a few days ago when a man from one of the rural districts instituted an action against his wife charging her with contributing to the neglect of their infant.

The evidence disclosed that the woman had fled from home taking

the infant with her, the husband following and forcibly taking possession of the child which he placed in an institution. He desired its custody and asked the Court to so order. He maintained that owing to her ill-health his wife was unable to support the child.

The woman was successful in setting up a defence that her ill-health was due to her having received gonorrhoeal infection from him; that she had undergone eight pelvic operations, one of which was a pregnancy in the tube. The man acknowledged that such was the case in all particulars.

In Canada we do not seem to have any statistics concerning the age at which helpless children have been victimized and despoiled but, personally, we had brought before us a number of little girls suffering from venereal diseases from five years of age upward, some of these having to undergo pelvic operations. This is one of the most appalling and tragic things in life, and the obscenity sickens us like the smell of blood.

It was Wederkind in his powerful drama, "The Awakening of Spring" who thrust over the foot-lights with Teutonic grimness the lesson that degradation and death may be the fate of any group of gifted children because of the neglect or cowardly reticence of their own parents.

Sometimes, a baby is brought in plainly suffering from Venereal infection. A feeble-minded girl with a tubercular bone in her nose, brought us a blind baby recently, and asked for its adoption. This was the third baby she brought to us in three years, the father of each being a certain married man in the country.

So many children suffer from this gonorrhoeal opthalmia, which has been described as "the disease of the innocent", that at the risk of being presumptuous one must dare to suggest to the Canadian physicians here assembled that they take steps to have legislation enacted, making it obligatory—no matter how respectable its parents, that every child's eyes be cleansed with the proper percentage of silver nitrate immediately after birth. Till this be enacted, physicians should make such an arrangement with mothers prior to the birth of the children.

In speaking of the ignorance of women concerning gonorrhoea, Dr. John H. Stokes, has said, "A man has a chance to know what ails him. The woman in the existing state of popular and even medical sentiment, is lied to at every turn of the way. Gonorrhoea is serious enough a disease in men; in women it may be a disaster." In another place, speaking of the resultant operation euphoniously called "hysterectomy plus bilateral salpingo-oophorectomy" or "pan-hysterectomy", the same writer says, "To hear such a woman defenceless-looking in her braided hair and ether jacket, whisper timidly as they wheel her, uncomplainingly up to the operating table, "I do hope they'll fix me so I can have a baby"; to see the skin and muscles gape before the sweep

of the knife; to think that woman's thoughts for her, through an hour of ether haze and hushed comment and the peculiar sibilant click of hemostats as the surgeon does his uttermost to cobble up the wreckage and save her hope; finally in despair he begins the quick, swinging, practised movements that mean it must all go, and then to see her a week later, after they have told her the ovary story, is an experience to make the hardest turn away his face."

Noeggerath has stated that 80 to 90 per cent. of pelvic inflammation disease and 50 per cent. of absolute and one-child sterility in women are due to gonorrhoea.

Heretofore, physicians have held, almost universally, that professional etiquette did not permit of the wife being told that she was suffering from venereal infection. Without entering into any argument on the subject, we wish to say that however sincere or insincere this code of professional etiquette may have been in the past, it has been entirely banished by the recent addition of clause 316 a (1) to the Criminal Code of Canada, which clause provides that any person who is suffering from venereal disease in a communicable form, who knowingly or by culpable negligence communicates such venereal disease to any other person, shall be liable on conviction to a fine not exceeding five hundred dollars, or to imprisonment for a term not exceeding six months, or to a fine and imprisonment.

No physician can any longer maintain an aloof or neutral position, either from what has been called "professional etiquette", or from a desire not to offend the person responsible for the infection, or who is paying the bill, in that by such a course he is leaving himself liable to the charge of being an accessory after the fact.

No man should, not a moment under these circumstances, expect or request a physician to maintain a silence where the safety and life of the woman are concerned, and no physician, no matter how peculiar his sense of propriety, should shirk his very manifest duty in this behalf. A clean bill of health should be required of the offending person—whether male or female—before marital relations are resumed. As yet, few physicians are aware of this new provision in the Criminal Code, and we are persuaded that all members of the profession will welcome it as placing a stern obligation upon them to speak. No man or woman can reasonably expect a physician to become accessory to a crime merely in order to shield their condition, or to allow them to persist in the criminal infection of innocent persons.

It should also be the work of the Provincial Committees to co-operate with their government in striving for the rehabilitation of the women and girls who have been discharged from jail after undergoing treatment, or who are still undergoing periodic treatment at the Government clinics.

This work is much too arduous to be laid upon the already over-burdened shoulders of the court or police officials.

When, after her trial, a woman is remanded for examination, and subsequently for treatment under the provisions of the Venereal Diseases Act, she is usually perturbed and distinctly angry. In such cases, it is our invariable custom before she leaves the court, to explain to her, with considerable minuteness, the serious nature of the disease; the urgent necessity of her taking the cure; that this treatment is not meant to penalize but to help her, and that the expense is being borne by the government.

Most of the women become interested at once, and agree to do their part in submitting cheerfully to the rigorous treatment, and in promising to protect from infection those with whom they come into contact, by not drinking from the same cups, using the same towels or by wearing their articles of dress.

When these women are in jail, because of their comparative isolation, we sometimes supply them with needle-work which may be ultimately disinfected by washing. Also we send them books and magazines which may be destroyed with, occasionally, a written card conveying a helpful message.

When the women are released from the jail as being non-infective, we endeavour to obtain employment for them away from their former haunts and dissolute companions.

If one may be permitted to perpetrate an Irish bull, one might say that in the case of a young girl, the cure is only beginning with her cure. In any constructive attempt at her rehabilitation, close personal work is required. Otherwise we are face to face with all the depressing facts of recidivism.

In our experience in this work, we have found the best plan is to place the girl under the charge of some fine-spirited woman who will be at once strong and patient with her alloted ward. We are well-persuaded in the belief that "the beautiful souls of the world possess the power of transmitting other souls into their own loveliness. Shining on their fellows, they are more potent than codes of law or than militant armies." Nothing can take the place of these intimate personal relations if real reformatory work is to be accomplished.

As indicated above, so soon as the sufferers are dismissed from custody as being non-infective, they are required, in cases of gonorrhoea to present themselves at the government clinic once a week for further treatments. During this process in their cure, the physician and nurse give them literature bearing on the subject. Dr. Orr, the very efficient and kindly official in charge of the Clinic at Edmonton, tells us that so keen have the patients become in getting cured, that they can hardly

wait for their next treatment, and frequently present themselves a day or two sooner than directed. Not only this, but these persons have become missionaries who tell others infected how they, without any penal stigma attached, may be treated with privacy and completeness at the government clinic. As an evidence of how quickly the underworld is "getting the idea", we find that some of its members are going to physicians on their own accord and asking to have the blood test applied. When these women and men are apprehended and brought into court on any charge, it gives them not a little satisfaction to produce for our inspection a clean bill of health. This, however, is not accepted, the regulations of the Act being adhered to with rigidity.

What this voluntary submission to treatment means to a country that is threatened with universal infection, can hardly be calculated. Once the people are persuaded that the governments are in earnest and mean business, they will not wait to be forcibly cured, but will go about it themselves.

It is found that nearly all prostitutes brought into court have gonorrhoea, and that many have also syphilis. Some few have the added afflictions of tuberculosis with a well-established habit of drug dosage.

Under the provisions of the Venereal Diseases Act of Alberta, we are only permitted to remand for examination those persons apprehended under the Criminal Code, so that a large percentage of diseased prisoners slip through our hands—that is to say all those who have been apprehended for being drunk and disorderly in public places. This is a matter which should be speedily rectified. The only exception to this disability is that which permits the judge of the Juvenile Court, if he or she thinks it advisable, to remand for examination and treatment, all persons charged under the provisions of the Children's Protection Act of the province, or any child alleged to be "neglected" within the meaning of that enactment.

One of the very few pleasant things about the work of control and rehabilitation of sufferers from these diseases, is the gratitude of those who have been cured. One little girl, with a mentality of about seven years, whose father was killed in Flanders, and upon whom the Victoria Cross was conferred because of his splendid heroism, is confined to jail under a charge of vagrancy, at the same time undergoing treatment for what appeared to be a hopeless condition. The patience of her relatives had been exhausted and they had washed their hands of her both literally and metaphorically.

This child is immensely grateful for the care bestowed upon her, and continues to write us affectionate letters with the certain symbolic crosses, typical of her class, appended at the end of each. Whenever we see these crosses, while greatly appreciating her spirit, we are fully per-

suaded in our mind that, where "the dignity of the bench" is concerned, we never were nor never will be properly constituted police officials. We acknowledge it shamefacedly, but with a secret satisfaction because our harp can never be hung on a willow tree.

Arrangements have been made that upon her release from treatment, for the future, she be maintained in the Social Service Home, with monetary assistance from the Patriotic Society and others who have become interested in her rehabilitation.

In referring to this matter of gratitude, and of the irrational hostility which sometimes marks the thought of otherwise intelligent people towards these great sufferers, an eminent Professor in Medicine has said, "After all, there is something to inspire in the work. Those who can bring to the care of the modern venereal leper the spirit of a Father Damien will have a real mission. There are few who reap more generously the rewards of gratitude and whole-hearted fellowship than those who appreciate and lighten the trials of that portion of the sick whom public, misunderstanding, condemns without a hearing.'

Perhaps this is what the well-beloved Robert Louis Stevenson meant when he declared that his duty to his neighbour was not to make him good but to make him happy, although he must have known, as all of us do, that these two conditions in life are almost synonymous.

It was into the mouth of a sufferer, such as we have been describing, that a poet places these words indicative of her return to faith and womanly purity,

"Because, even here in this Mansion of Woe
Where creep the dull hours leaden-shod,
Compassion and tenderness aid me,
I know there is God.

A Plan for a More Effective Federal and State Health Administration

FREDERICK L. HOFFMAN, LL.D.
Third Vice-President and Statistician the Prudential Insurance Company of America

(*Continued from the August issue*).

The Advisory Public Health Council

As essential to such a plan of complete reorganization it would seem that provision should be made in the case of the Federal Health Administration as well as in those of the several States, for an advisory council, rigorously limited to suitable expert ability. Such a council is urgently insisted upon in the proposed plan for a Ministry of Health for Great Britain. It has been recommended by the British Medical Association that such a council "should be appointed by the minister from nominations made by bodies recognized as having a special claim to representation. This claim should be based not on any supported vested interests, but on the ability of the bodies concerned to give expert advice on the subjects to be considered and to keep the minister in living touch with those bodies and classes of persons on whose co-operation the success of the new ministry would depend". Applied to the problem under discussion this would mean that the Federal health administrator, or the State health administrator, would attach to his office a body of experts recommended by associated activities, such, for illustration, as the American Public Health Association, the American Red Cross, the National Tuberculosis Association, the National Safety Council, the National Committee on Malaria, the American Association for the Study and Prevention of Infant Mortality, etc. Since the advisory services through the council would be individual rather than collective in the majority of cases in which such advice would be required, the membership of the council might be made relatively large. There should, of course, be representatives of the American Medical Association, the American College of Surgeons, the American Dental Association, the Mental Hygiene Association, the Social Hygiene Association, the Association of Pharmacists, The International Health Board, etc. There might even be representatives of related public activities, such, for illustration, as the American Statistical Association, the American Actuarial Society, the Association of Life Insurance Presidents, the U.S. Chamber of Commerce, the Association of Industrial Physicians, the National Industrial Conference Board, the National Association for School Hygiene, etc. Assistance might also be drawn from the mem-

bership of the different sections of the American Association for the Advancement of Science, the American Anthropological Association, etc. The spirit of active co-operation and the willingness to render voluntary services are so thoroughly diffused throughout this country that it may safely be held that whatever voluntary assistance would be required by the Federal or State health administration in the directions indicated would be forthcoming without any difficulty whatever.

Teaching Methods in Public Health

Of the foremost importance, however, is the establishment of a thoroughly well-organized School of Hygiene and Public Health, independent or, in connection with, a large university providing abundant facilities for research work. Such a school should not be made to rest upon exclusively medical considerations. The new science of Public Health is essentially non-medical in its major function of disease prevention and control. The problems of sanitary law and administration are almost exclusively non-medical, except in so far as medical considerations amplify local powers, such, for illustration, as those of quarantine officers, inspectors of nuisances, control of midwives, protection of infant life, employment of children, etc. In all of these matters legal, social and economic considerations take priority over those that are medical. The same conclusion applies to the supremely important question of a wholesome and abundant water supply, which is primarily an engineering problem. The determination of impurities or the required methods of mechanical or chemical purification, as well as the chemical and bacteriological examination of the water itself, all lie outside of the plan and scope of medical service, even in the broadest sense of the word. Equally conclusive are the facts regarding air, ventilation and heating. The ascertainment of the composition and physical properties of air, of air impurities and the making of air examinations, as well as the ascertainment of the quantity of air required for ventilation and the best methods by which the necessary quantity of air can be supplied, are primarily engineering questions, the practical solution of which has become a recognized branch of sanitary science. Even in such a restricted field as dust phthisis, the major portion of the required research work is non-medical. The most useful contributions which have been made to problems of ventilation and heating are those of mechanical engineers, rather than those of medical men.*

*For illustration, the report of the Departmental Committee appointed to inquire into the ventilation of factories and workshops is signed by Prof. John Scott Haldane and Mr. Edward H. Osborne, neither of whom, as far as known, is an active member of the medical profession. The reports of this committee rank as the most useful contribution to a subject which is of the utmost practical importance to persons employed

In the immense field of food control and the enforcement of laws against food adulteration, etc., the responsibility in the main rests upon chemists and bacteriologists and not upon members of the medical profession. The same conclusion applies to the supervision of beverages, including the use or the abuse of alcohol. One of the most important recent investigations of the psychological effects of alcohol is the work of Raymond Dodge and Francis G. Benedict, experts in nutrition and psychological research, but, not as far as known, men of any experience whatever in the practice of medicine as a healing art.

Such subjects as clothing, exercise, soil, housing, schools and hospitals are largely problems outside of the field of medical practice.* While all of these questions have important medical aspects, the governing

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under conditions which give rise to atmospheric pollution. The investigations of the commission included such widely different employments as clothing factories, boot and shoe making, laundries, bread and confectionery making, printing, file-cutting, textile factories, etc. Practically all the technical problems involved in the control of dust and the removal of fumes are non-medical and depend for their ultimate solution upon engineering considerations. It may be said in this connection that Mr. E. H. Osborne is the engineering adviser to the Chief Inspector of Factories and that if Mr. John Scott Haldane is a member of the medical profession, he was probably not appointed to the committee on that ground, but because of his preeminence in other fields of exacting scientific research. It may also be suggested to those who are interested in this question that a collection of illustrations of the methods of dust extraction has been compiled by Commander Sir Hamilton P. Freer-Smith, R.N., and published as a Parliamentary paper in 1906 (C.D. 3223). It is also suggestive that the Commission on Ventilation of the State of New York, of which Prof. C. E. A. Winslow was the chairman and Prof. Frederick S. Lee an important member, included, as far as known, only a single member of the medical profession, Dr. John Alexander Miller, the distinguished author of an important paper on "The Effect of Changes in Atmospheric Conditions upon the Upper Respiratory Tract". The work of Dr. Miller in this and other fields is an admirable illustration of the practical services which members of the medical profession, *if otherwise qualified*, can render the cause of improved ventilation and dust control in factories and workshops.

*This observation, of course, must not be carried too far. Important contributions have been made to the scientific study of the effects of clothing upon health by members of the medical profession, and even more so, of course, to the larger problem of physical exercise. Among recent contributions, reference may be made to a paper on "The Influence of Clothing on the Surface Temperature of Infants", by Drs. McClure and Sauer, of Chicago, contributed to the *American Journal of Diseases of Children*. This paper presents an admirable analysis of temperature observations, etc., concluding with the statement that "At a room temperature of about 31° C. an infant clothed in the manner above described and under the conditions of our observations, approaches very closely the point where a heat loss by conduction and radiation is no longer possible. Our experiments indicate that such a state of affairs may be fraught with danger to the organism". Of value also is a rather interesting volume on "Dangers in Neckwear", by Dr. Walter G. Walford, London, 1917, including observations on the thyroid as affected by neck pressure; the importance of neck-room in growing children; the reasons why small ailments are often the beginning of a serious breakdown, etc.

principles of right public action are in the main non-medical, or determined by other special physical, social and economic considerations. In the successful solution of each and all of these, medical men have in the past and are certain in the future to render much valuable and, in fact, indispensable aid, but it is held that for *administrative purposes* non-medical, scientific and business ability are more urgently needed for the attainment of urgently required practical health and general sanitary reforms.

Finally, such problems as scavengering and street cleaning, sewage and sewage disposal, and the disposal of the dead are largely non-medical, and so much so that it would seem a wrongful waste of opportunity on the part of a medical practitioner to give much time and thought to problems obviously essentially of an engineering or otherwise non-medical character. The same conclusion applies to the supervision and control of offensive trades or dangerous occupations, which within recent years have become centralized in the public administration of factory inspection on the one hand and safety engineering on the other.

With these facts in mind, it would, therefore, seem that a thoroughly efficient modern School of Hygiene and Public Health should rest upon different fundamental principles and a differently conceived plan of co-operation and coordination than the recently established School of Hygiene and Public Health of Johns Hopkins University. The Johns Hopkins School provides, it is true, courses leading to the degree of Doctor of Science in Hygiene and of Bachelor of Science in Hygiene, but the general implication is that priority of consideration is given to medical subjects as a prerequisite of graduation, leading to the degree of Doctor of Public Health. As yet, merely in the preliminary stage of organization, it is to be hoped that in its future development the School of Hygiene and Public Health will be made to rest upon a much broader plan of organized thought* than is at present the case, for though the

*The most important recent publication on this subject is a treatise on "The Organization of Thought" by A. N. Whitehead, F.R.S., Philadelphia, J. B. Lippincott & Co., 1917. The work is an indictment of modern methods of technical education and a convincing plea for drastic educational reforms. In the words of P. G. Nutting: "Especially in a time of crisis like the present, national welfare depends upon the greatest possible development and utilization of all its resources, particularly those of strength and skill. New experts should be constantly selected and trained. All the highest expert knowledge should be at the service of the nation for directing the best development, utilization and conservation of all national resources, material, intellectual, manual and financial. Organizations and individuals, as well as the nation as a whole, should have the help of systematic expert knowledge in bringing them up to their possibilities. A general and well-ordered application of the results of scientific research to the problems of the individual, the organization, the nation, and of the world would have incalculable effects. We are only beginning to apply organized knowledge in an organized way, but the desirabliity of increasingly doing this in the near future is urged". (*Science Monthly*, May, 1918.)

teaching of effective methods of sanitary administration is paramount, it is given merely incidental consideration in the curriculum at the present time. The object rather seems to be to add a relatively small measure of public health education to a large amount of previous medical education, much, if not most of which, is absolutely useless for all public health purposes. There is no adequate provision for the teaching of sanitary law and public health administration in its hygienic, as well as in its medico-legal and more general aspects. There is also inadequate provision for the teaching of the principles and practice of ventilation and heating and of illuminating engineering, than which perhaps no branches of modern public health administration are of greater immediate practical importance. Considering the fact that an ever-increasing number of men and women are employed indoors and at occupations involving more or less physical and physiological strain, the question of adequacy of air and ventilation, freedom from exposure to injurious industrial dusts, proper methods of lighting and heating, are all paramount questions of public health administration. It would, therefore, not seem sufficient to include such important subjects as these under the general term of "physiological hygiene", and in any event the more practical engineering aspects of these particular branches of public health administration should be more clearly emphasized.

To be Continued.

Sept 1920

The Co-ordination of State and Private Enterprises in Public Health Work

By Dr. W. H. Hattie
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Read at the Annual Meeting of the Canadian Public Health Association, June 21 and 22, 1920

FOUR years and more of the stresses and distresses of war taught us many a useful lesson. We learned something of our strength, something of our weakness, and a mighty lot of the value of co-operation. We learned that even a destructive force, to be efficient, must be conserved—that the outcome of the struggle depended not merely upon the number of the enemy that could be killed, but to a great extent upon the number of our own soldiers that could be saved. We learned that conservation of health and life is a practicable thing, and not merely a pleasant fiction. And we learned that a righteous appeal meets with a worthy response. These are but a few of the lessons, jolly well needed, which the great experience taught us, but the greatest of them all is the value of team work, with absolute unity of direction.

Such wars as that from which we have recently emerged are but episodes in the history of the world. Though rightly called the great war, the devastation it caused was trivial, and its influence upon mankind will be but ephemeral, in comparison with a struggle which has waged incessantly from the earliest times and which will continue as long as the world lasts. On the one side, every living soul—on the other, the hosts of death; and never a doubt as to the ultimate result. This, too, is war—war against a relentless foe which respects neither age nor sex nor social position, which never asks for a truce and which never enters into a treaty. We cannot hope to completely conquer such a foe, but we can combat it so that its ravages may be materially lessened, and its toll of life and efficiency and material things may be greatly reduced. Even such a result is well worth striving for, and the degree of our success will be determined by the intelligence with which our efforts are directed and by the harmony of our team work. The handicap under which we are placed permits of no misdirection or dissipation of energy.

Nothing has been more heartening to public health workers than the growth and spread of interest in public health possibilities which recent years have witnessed. The stimulus has been felt in many ways, and

has aided greatly in furthering advance. While zeal may at times have outstripped prudence, leading to multiplicity of organizations with resultant overlapping and perhaps clashing of interests, the tendency towards co-ordination of effort had been steadily becoming more evident. And now that the League of Red Cross Societies has been formed with so magnificent a purpose in view—"the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world"—we have an ally, the strength of which can scarcely be overestimated, and which has the unquestioned confidence of the people of every nation. If then, we take advantage of this alliance and determine upon effectively correlating the activities of all agencies with similar aims, whether they be State or private organizations, in a united endeavour to improve the general health, we should make tremendous strides towards our common goal. And because of Red Cross connection, there should develop a feeling of mutual interest and sympathy among nations which should become a most important factor in securing and preserving peace throughout the world.

It is particularly gratifying to those in the service of the State that the League of Red Cross Societies has definitely recognized that the protection of the health of the people is a responsibility and a function of government, and has decided that public health work under Red Cross auspices will be supplementary or complementary to that undertaken by other voluntary and State agencies. The readiness of so powerful an organization to enter the public health field in what might almost appear to be a subordinate position is indicative of the splendid spirit which actuates Red Cross activities generally. It, moreover, shows the consistency of an organization which has won a reputation for such efficiency as can be attained only through centralization of authority. So fine an example will doubtless overcome any hesitation which other agencies might have in agreeing to carry on their undertakings under greater or less control by a Central Authority. It is very human to desire independence of action, and to crave public applause, but in the great work of saving life and of increasing the comfort and happiness of mankind the attitude of all good workers will be one of complete unselfishness.

When, therefore, it is said that the general direction of all health work should be in the hands of the health administrator of the State, it is not because of any wish that such official should receive anything more than merited kudos for the results achieved. It is because such an official is the logical person to whom this great responsibility should be assigned. Much public health work can be carried on only under statutory enactments, for the formulation and enforcement of which the State is responsible. Practically all the progress which has been

made in this work has been either initiated by or made possible by State health organizations. Much the larger part of the expenditure which has thus far been made on behalf of the public health has been from State funds. Officials of the State have opportunities for acquiring information as to both general and local needs and for determining the most promising lines of action which are in but exceptional instances available to private persons. And the people generally have come to look to the State for leadership in such matters. If, therefore, we are to agree upon the principle of unity of action, it would appear that the co-ordinating and harmonizing force should be the State organization. It certainly could not be hoped that any private enterprise could be assigned such a place without arousing the antagonism of other agencies which are doing most useful work along similar lines.

The amount of control which the State organization might exert over private enterprises should, however, not be more than is necessary to prevent wastage of funds and effort. As far as possible there should be no interference with autonomy. Every possible assistance should be rendered, every encouragement should be offered, and every credit should be given by the State organization to the co-operating agencies. And while all private activity in respect to health work should perhaps be conditional to the sanction and oversight of the State organization, the pressing need for such private activity and the unquestioned value of a great deal of the opinion which evolves from such sources, should prevent any unreasonable interference with the work they are carrying on. There should, of course, be frequent conferences in order that there may be definite and complete understanding in respect to policy and the relationship between the various organizations.

While not suggesting that there should be any diminution of State activity or lessening of State responsibility in matters which are definitely functions of the State, it would appear that unofficial organizations could materially aid in the furtherance of our aims by encouraging investigation along promising new lines, especially through financial assistance to laboratories; by assistance through endowment or otherwise in the teaching of public health to medical students and others—as to graduate nurses who desire to enter our fields, and to those who wish to engage in welfare work; and by assistance to national organizations now engaged in propaganda which has a bearing on public health. The proposal of the Red Cross Society to provide in whole or in part for the support of public health nurses in communities in which local funds are insufficient for such a purpose is a most practical method of co-operation. Further assistance might be rendered by furnishing paid and voluntary workers to help at health centres, health clinics, etc., in rendering clerical aid, stimulating interest, distributing relief, and carry-

ing on such other work as does not require technical training, so as to conserve the time and energy of those who have such training. In such ways immense impetus would be given to the work of the official agencies.

The inspiring programme which the League of Red Cross Societies has laid down, and the splendid work on behalf of the public health which has been carried on by the Victorian Order of Nurses, Anti-tuberculosis Leagues, child welfare organizations, local nursing associations, womens' institutes and kindred enterprises, merit our heartiest commendation. The self sacrifice shown by so many of our people, who have given freely of their time, energy and substance in the effort to ameliorate the conditions of their less fortunate fellows cannot be too highly extolled. Those holding positions in the service of the State owe to these noble people a really burdensome debt of gratitude. We need the stimulus and the encouragement as well as the help they give. It is with no desire that their activities should be curtailed, or that any irritating restraint should be put upon them, that it is suggested that they should work under State direction, but rather to increase their efficiency and to obtain through harmonious co-operation the best possible esults in "the improvement of health, the prevention of disease and he mitigation of suffering".

Social Background

The Function and Organization of a Family Work Agency

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IT is necessary that we should understand the term "Family Work Agency". It has come into use in describing agencies such as "Associated Charities or Charity Organization Societies", whose functions are usually more limited than their name implies.

In brief we may consider the function of the family work agency to be that of securing a normal life for families when one or more members of the family are in social maladjustment. The family is accepted as the unit of society; the needs of a particular member of a family cannot be considered except in relation to the family as a whole; the needs of a family cannot be considered except in relation to the whole community in which it lives.

The particular need of the individual may appear to be economic, physical, educational, or spiritual, but each one has to be considered in relation to the remainder.

The effective family work agency fully appreciates and acts upon the foregoing principles; the individual or agency who refuses to recognize these principles and attempts to deal with the individual as an individual and not as a member of a family, or with the family without relating it to the community in which it lives is unconsciously denying the family its proper place as the social unit on which society is based and is ignoring the complexity of present day community life.

The social worker who denies the relation of spiritual to economic or physical need is oblivious to his own motivation to service; the church worker who expects to readjust the individual to normal life by obtaining a profession of faith unconsciously plays into the hands of the Pharisees who believe in the form and neglect the practice of religion. Religion makes a poor bed-fellow for vice, disease, crime and sordid poverty. A profession of faith from those who are surrounded and often part of such anti-social conditions is in constant danger of succumbing to attack.

The Family Work Agency endeavours to plan its work of social maladjustment in such a way as to bring into play all the healthy influences of family and community life; it gives to each its due importance, it finds in the school teacher, the doctor, the clergymen, the health

official, the policeman, the judge and groups of men and women who can be used to dove-tail into its program for the benefit of the family. It reveals the members of this group to the family as potential friends; it interprets to each and all in the group their responsibility to the family and to each other.

In direct ratio to the effectiveness of the family work agency of a city will be the degree of co-operation shown between all the city's social agencies.

Where the family work agency is effective there will be found wide recognition of the fact that each agency is but a small part of an intricate machine whose work is to produce human happiness.

The more intricate the machine the more able it is to turn out a good social result. If its mechanism is perfect, if every need of the human material is considered as it passes through the social machine then the social result will be perfect, able to hold its own in the battle of life; if, however, the machine is imperfect or if our part functions poorly, the social result will be imperfect. No one social agency can live unto itself alone.

It is conceivable that a very intelligent engineer, after years of study and training, might commence to build a locomotive all by himself; with the aid of every modern device he might in the course of years accomplish his task. It is conceivable that a very intelligent individual might in turn substitute for Parent, Teacher, Doctor, Nurse and Lawyer in readjusting a family to normal life. The complexity, however, of either undertaking demands a distribution of labour and perfect co-ordination of respective functions.

In so far as community effort is necessary to safeguard the integrity of the family it becomes necessary for the social agencies to confer with each other and determine upon policies to be advocated in public. Housing, recreation and public health will be the common concern of each and every agency in their prevention as well as in their ameliorative activities. The treatment of the individual family in social maladjustment, however, does not justify the calling together in conference of every agency. A simple process of effecting co-operation must be devised.

I shall assume that you are all familiar with the analogy between medical and social diagnosis and treatment. The social worker called in for the first time to treat a patient suffering from the disease of poverty or social maladjustment desires to get historical background. It is impossible to enquire from every agency which might have known his patient in the past. The confidential exchange removes the necessity; he enquires of this one source; his enquiry gives the name of his patient and only such other information as will enable his patient to be dis-

tinguished from all others of the same surname. *The exchange gives him no information about his patient other than that on such and such a date some other agency had his patient under observation. The connection is made and the social worker begins to build up his historical background from the past records of churches, doctors, hospitals, schools and social settlements.

The most common criticism of the 'Confidential Exchange" is that it makes public the names of those who are in distress. In actual practice the exchange protects a family from undue publicity. The vicar of my church, knowing me and my family, registers an enquiry at the exchange about me. Assuming that no one has done this before, all that happens is that a clerk makes out a card with certain particulars on it as to my family which finds its place with thousands of others and is lost and "dead" until perhaps ten years later when something happens. I die and my wife is left a widow, my boy gets into the juvenile court for throwing stones, some one else enquires at the exchange and they are told that my vicar was so-and-so of such and such a parish on such and such a date. The new enquirer communicates with my vicar and they work together to help my family. The vicar's knowledge of the family being essential to the second enquirer.

With a welloperated confidential exchange in any community it will not matter how many different family care agencies are at work—provided all use the exchange and then co-operate in their efforts. In fact there are distinct advantages in having more than one agency at work as a division of work permits of agencies such as the Sons of England taking a special interest in special families. The dangers of division are only apparent when these special agencies neglect to play their part in the all-round program for the development of the family.

The subject allotted to me does not suggest a discussion of the relative functions of public and private agencies. This, however, is a question which is being faced by all the larger cities on the American Continent.

To the question, "should family care work be done by a private or by a public agency?" there is only one answer, it entirely depends on the community.

The outstanding advantage of the position of the private agency over the public is its power to experiment and differentiate in its plans for families without fear of being asked to explain why it did this for A and refuses to do the same thing for B. The chief disadvantage is to be found in the difficulty experienced in raising sufficient funds for

*For a complete understanding of the Confidential Exchange read *The Confidential Exchange*, by N. F. Byington, published by The Russill Sage Foundation, East 22nd Street, New York City.

service and relief and in the enormous amount of time consumed in raising those funds.

A public department, which has come into being after the community has been educated to appreciate the value of "service" in family work, should be able to secure all the necessary funds without trouble and its governing committee can devote all their time to considering the social problems revealed by the case work of the department.

There is, without doubt, a danger that those who have once fallen below the line of self-subsistence may rely upon what they consider to be an inexhaustible civic purse. This attitude can be quickly abolished if the committee is firm in support of the decision of its trained social case workers, who will be enthusiastic at the chance of giving adequate relief where needed without constantly being harassed by a committee on account of the lack of funds.

The compromise between a wholly voluntary agency and a civic department completely under the control of elected aldermen seems to be a "Commission" on which a bare majority of elected aldermen serve along with appointed citizens.

Such a commission should depend in the main on an appropriation from city funds for its financial budget, but there is no reason why an auxiliary agency cannot be formed in the community which, having no paid staff of its own, can collect money for "special functions and purposes" which can be placed at the disposal of the "Commission". In this way a commission may grow to realize the value of a "visiting housekeeper" whose services have been paid for and lent by an auxiliary. The expense of the visiting housekeeper having been assumed by the commission, the auxiliary may loan the services of a "vocational guidance worker" or a "psycopathic social worker".

In conclusion we may say that the essentials in a family work agency are, first a Board of Committee of level-headed far-sighted men and women willing and able to give much time to their work; second, an intelligently equipped staff; and third, adequate funds. Given these three conditions a sane but fearless agency, whether public or private, may do much to interpret the so-called masses and classes to each other in the process of securing a normal life for those who have temporarily become maladjusted to society.

Cases and Deaths of Communicable Diseases reported by Local Boards of Health for the Month of July, 1920

Diseases.	July 1920. *Cases*	*Deaths*	June 1920. *Cases*	*Deaths*	July 1919. *Cases*	*Deaths*
Small-pox	142	0	249	0	51	1
Scarlet Fever	169	4	371	12	154	3
Diphtheria	302	46	342	45	186	19
Measles	1,419	15	3,613	22	83	0
Whooping Cough	106	5	151	15	80	6
Typhoid Fever	35	8	31	12	34	8
Tuberculosis	161	82	220	184	210	147
Infantile Paralysis	2	0	2	1	7	0
Cerebro-Spinal Menengitis	3	3	..	9	11	10
Influenza	6	6	39	29	..	..
Acute Influenzal Pneumonia	2	2	..	10	..	60
Acute Primary Pneumonia	..	116	..	260	..	..
	2,347	287	5,118	599	816	254

Venereal Deseases reported by the Local Officers of Health

	July 1920. *Cases*	June 1920. *Cases*	July 1919. *Cases*
Syphilis	131	169	83
Gonorrhoea	135	183	139
Chancroid	0	4	7
	266	356	229

Reports of Communicable Diseases for the Province for the month of July show a most decided reduction in nearly all the diseases, especially measles, compared with the month of June last, as may be seen by the Comparative Table. The decrease may partly be accounted for through the franking privileges being cut off and the usual number of reports from Local Boards of Health have not come to hand. The reduction in small-pox cases is 207, scarlet fever 202, diphtheria 40, and measles 2,192. The 142 cases of small-pox covered 39 municipalities or an average of less than 4 each. The places reporting the disease are as follows:

County	*Municipality*	*Casse.*
Algoma	Sault Ste Marie	6
	Johnston Tp.	1
	Unorganized Tp.	1
Brant	Oakland	1
Carleton	Ottawa	30
Hastings	Belleville	12
	Indain Reserve	2
Kent	Oxford Tp.	1
Leeds and Grenville	Prescott	1
	Elizabethtown Tp.	1
	Bastard and B.	1
Lennox and Addington	Earnesttown Tp.	1
Middlesex	Westminster Tp.	4
Muskoka	Gravenhurst	5
	Bracebridge	3
Nipissing	Widdifield Tp.	1
Ontario	Rama Tp.	4
Oxford	Blenheim Tp.	1
Perth	Stratford	1
Peterboro	Peterboro	6
Prince Edward	Picton	1
	Ameliasburg Tp.	2
Simcoe	Victoria Harbour	3
	Nottawasaga Tp.	1
Stormont D. and Glengarry	Cornwall	5
Sudbury	Sudbury	1
	Foleyet	1
Temiskaming	Timmins	1
	Cobalt	1
Thunder Bay	Fort William	5
	Paipoonge Tp.	2
	Neebing Tp.	4
	Springer	1
Victoria	Emily Tp.	2
Waterloo	Kitchener	6
	Wilmot Tp.	2
Wellington	Mount Forest	1
York	Toronto	17
	Newmarket	1
	Aurora	2
		142

The Opium and Narcotic Drug Act

For the Information of Wholesale and Retail Druggists and Others Concerned

Under the amendment to the Opium and Narcotic Drug Act, which was passed at the recent session of Parliament, it is provided that the same shall come into force on a date to be fixed by proclamation of the Governor-in-Council.

It is the intention of the Department to have this Act proclaimed and come into force on or about September 1st, next.

Under the new Act, all wholesale druggists, manufacturers or dealers are required to obtain a license to deal in these drugs, for which an annual fee of twenty-five dollars ($25) is charged. All retail druggists who manufacture narcotic drugs ,or preparations containing the same, are required to obtain a license, for which an annual fee of five dollars ($5) is charged. All druggists, other than those who manufacture, and every physician, veterinary surgeon and dentist is required to make a declaration that they are engaged in the sale or distribution of these drugs. Forms will be supplied by the Department on application to be filled in and returned as required under the Act.

The Act also requires all druggists, whether wholesale or retail, and all manufacturers to keep a record of their receipts, together with a record of the quantity manufactured, and a record of their sales. These records are required to be kept in a special book kept for this purpose, and after a prescribed form.

Another important change under the new Act is the limiting of the number of ports in Canada at which these drugs may be imported or exported, and the provisions whereby opium and other drugs intended for export must be packed and marked in such a manner as to denote the contents of the packages.

Provision is made under the Act for the sale of preparations intended for internal use which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of godeine to the fluid ounce. Provided, however, that such preparations must be medicated to sufficiently preclude the possibility of their being purchased simply to obtain the narcotic effect, and further that such preparations must have printed on the label or wrapper in a conspicuous place the following warning:

"IT IS UNLAWFUL TO ADMINISTER THIS PREPARATION TO A CHILD UNDER TWO YEARS OF AGE AS IT CONTAINS OPIUM AND IS DANGEROUS TO ITS LIFE".

The maximum penalty for infraction of the Act has been increased from five hundred dollars ($500) to one thousand dollars, ($1,000) and a minimum penalty of two hundred dollars ($200) is provided.

It is the intention of the Department at a later date to furnish all druggists with a copy of the regulations, together with a copy of the Opium and Narcotic Drug Act, with amendments to date.

Department of Health,

A Farewell from General Fotheringham

Corps Orders

By Major-General G. L. F. Foster, C.B.
Acting Director-General of Medical Services, Ottawa, Ont.

June 28th, 1920.

226 Special Order.

Major-General J. T. Fotheringham, C.M.G., upon retiring from the duties of Director-General of Medical Services, desires to take leave of all officers, nursing-sisters and other ranks of the medical services, both those who are still serving and those who have been demobilized but who have at any time served under him.

He is deeply sensible of the constant loyalty and high efficiency of the service as a whole, both overseas and in Canada, and of his indebtedness as officer administering the service in Canada to the personnel as a whole.

The memories of the Great War, with its priceless opportunities for serving king and empire and native land, will remian an inalienable asset to us all, and particularly the good-will shown by the service and by the profession generally to those who have been carrying the heavy burdens of responsibility for policy and administration, both at this headquarters and in the districts.

A. E. Snell,
Colonel, A.D.M.S.
for a/D.G.M.S.

News Items

Dr. Grant Fleming, who some months ago was placed in charge of the Venereal Disease Division of the Dominion Department of Health, has been appointed Deputy Medical Health Officer for the City of Toronto.

The Association of French-speaking Physicians of North America met at Quebec on September 9th, 10th and 11th.

The Health Department of the City of Toronto is conducting an investigation into the cost of foods served in Toronto restaurants.

The propaganda film, "The End of the Road", distributed by the Canadian National Council for Combating Venereal Diseases, has been shown to over 200,000 people in Canada.

A Pan-American Conference on the control of Venereal Diseases will be held in Washington, D.C., in December. It is understood that the American Red Cross is taking an active part in making this conference possible and that it is being arranged through the co-operation of the United States Public Health Service, the United States Inter-departmental Social Hygiene Board and the American Social Hygiene Association.

J. J. Middleton, M.D., Toronto, D.P.H., Queen's College, Belfast, has been appointed Director of Publicity for the Provincial Board of Health of Ontario.

New laboratories of the Provincial Board of Health of Ontario have been established at North Bay and Sault Ste. Marie.

The Canadian Red Cross Society has awarded to Miss Jean E. Browne of Saskatchewan a scholarship of $1,500.00 in Public Health Nursing, to be held for one year at the University of London, England. Similar scholarships are being given by the other countries which are included in the League of Red Cross Societies, a world-wide organization which is one of the first fruits of the League of Nations. The League of Red Cross Societies is providing scholarships in the countries where Public Health Nursing is not yet established, so that the course will be truly representative and cosmopolitan.

Miss Jean Browne, who goes as Canada's representative, has already attained prominence in the field of Public Health Nursing in Canada. She is an honour graduate of the Toronto Normal School and of the Toronto General Hospital Training School for Nurses, in the latter institution winning the General Proficiency Scholarship in the final year. In 1911 she organized the health work of the Regina Public Schools in Saskatchewan, and since 1917 she has been Director of School Hygiene for the Department of Education of Saskatchewan.

This international course in Public Health Nursing has the double object of giving post-graduate instruction, and encouraging the interchange of ideas current in the countries represented by the students. From both aspects the selection of so outstanding a figure in the field of Public Health Nursing in Canada is especially suitable."

The Florence Nightingale Medal has been awarded by the International Committee of the Red Cross to Miss Margaret Clotilde Macdonald, Matron-in-Chief of the Canadian Expeditionary Force during the war.

This decoration is international in character and is awarded only to women whose work in the cause of humanity has been of paramount importance.

University Course in Public Health Nursing Established in Ontario

THE Ontario Division of the Red Cross Society has completed arrangements with the University of Toronto for the establishment of a Department of Instruction in Public Health Nursing in connection with the Faculty of Medicine. This course requires the attendance of graduate nurses at the University for one academic year. It is hoped that fifty qualified nurses will be registered for this course by the end of September. Details regarding the course of instruction have just been made public, and it is evident that these will prove attractive to many nurses who see in this service an extension of the usefulness of qualified nurses to the community. The Ontario Red Cross is providing ten scholarships of $350 each; five of which are to be assigned to nurses who have served overseas.

The establishment of this course is in development of the policy to continue the work of the Canadian Red Cross Society in Peace Time, in conformity with Article 25 of the Covenant of the League of Nations, for the "improvement of health, the prevention of disease, and the

mitigation of suffering throughout the world. This has led to a realization that Public Health Nurses, specially trained for the work which they have to do, are not available in sufficient numbers to provide for an immediate extension of Public Health Nursing Service. It would be inadvisable for the Red Cross to attempt to influence public sentiment in the creation of a demand for Public Health Nurses, as it is bound to do, if it did not at the same time do something to see that such nurses would be available when required.

As Public Health is essentially under the jurisdiction of the Provincial authorities, and as there are Universities located in the capitals and other cities of the Provinces, the various Provincial Branches of the Red Cross Society have been in consultation with local Universities and Provincial Health Departments looking to such co-operation as may lead to the establishment of courses of instruction in Public Health Nursing for the purpose of extending the training of regularly qualified nurses in this direction. Arrangements have already been made for such courses at Dalhousie University, Nova Scotia, and at the University of British Columbia.

Editorials

Community Recreation

IT is of more than passing interest to note that the Canadian National Council for Combating Venereal Diseases has communicated with the various Chief Officers of Health for the provinces calling their attention to the necessity for promoting healthful recreation as a preventive of venereal disease. The Toronto Branch of the Council has also requested the Toronto Playgrounds Association to make a survey of the situation as regards organized recreation in Toronto.

Recreation is not only a preventive of immorality and venereal disease; it is a national human need for all classes and ages of society. A community without recreation is an unnatural community and where unnatural conditions are, there disease flourishes. The supervised dance, football, baseball, cricket or any other active recreation where one plays rather than watches are types of recreation that are not only desirable but necessary in healthy happy communities. Such recreation provides an outlet for man's natural play instinct. Served up in adequate quantities it is an antidote to the evils of industrialism. It may be utilized to lure the care-worn dwellers in sordid city boarding-house districts to care-free ozone breathing hours whence tuberculosis and its terrors are unknown. "Mens sana in copore sano" is an ideal for all, but an ideal which will be more readily attained by the lithe-limbed and clear-eyed than by the flabby and anaemic.

Play all should have and in wholesome quantities—the question is how. A national playgrounds association we have not. Some local associations there are, but their activities are sporadic. The conclusion is obvious. Recreation makes for health. Our health officials are many and active—Dominion, Provincial and local. Theirs is the duty. The PUBLIC HEALTH JOURNAL feels that an early survey of recreational facilities throughout the country on the part of Departments of Health with the idea of working out a definite recreational policy would be productive of wonderful results. Past errors of omission would, doubtless, be found to be of a startling character but the possibilities of advance limitless. Surely the time is ripe for us to make a start.

Industrial Hygiene

INDUSTRIAL HYGIENE is a comparatively new field in medicine. It is only a short time since the average physician looked somewhat askance at his professional brother in industrial work. To-day the picture is different and the development of a great new branch of preventive medicine opens up new and worthy opportunities for the best brains in the profession.

Frank Leslie Rector, writing in a recent number of "Modern Medicine", states that among the forty million industrial workers in the United States there are two million lost time accidents yearly entailing a loss of time of more than one day each. "Of this number 750,000 sustain a disability of more than four weeks' duration. About 22,500 are killed and from 15,000 to 18,000 more suffer permanent disability. This loss is estimated to be more than 18,000,000 man-days per year or the working time of more than 60,000 persons. Each industrial worker is sick on the average eight days per year, which amounts to the time lost of over a million working people for one year." The resultant loss of wages is incalculable to say nothing of the loss in production, the cost of medical attention and the cost to the community of the permenently disabled workers who cease to be self-supporting. The net result of it all is a tremendous problem in preventive medicine, the solution of which calls for work on a large scale carefully planned and executed.

The successful industrial physician must be an organizer and an executive. His intellectual armamentarium must include education of the broadest type as to disease and its causes, particularly social and industrial. He must understand the relation of fatigue to poor ventilation, bad lighting and faulty posture. He should be familiar with occupational poisons. He must realize the necessity for carefully planned recreation for employees as well as many problems relating to home conditions, proper food and clothes, and hours of work as well as personal and community hygiene and sanitation.

His general problem is the stimulation of activities which will produce contented and healthy workers. That industrial corporations are learning the simple lesson that it pays to keep employees well and happy in terms of production as well as in dollars and cents is a sign of the times. It is the same lesson that countries are only beginning to learn. In teaching great industries the facts as to the cash value of human life and happiness and the possibilities for their conservation, the industrial physician is doing a piece of work which will have the greatest influence in disseminating a point of view which must become general if the physical and mental standards of humanity are to reach the height which nature intended them to attain.

Sir William Osler

(In Memoriam)

By Frederick L. Hoffmann, LL.D.

Over the mystic sound-waves
Of the wintry ocean air,
There has come to me the saddest news,
That leaves me in despair.
Sir William Osler died to-day
And I feel the sun has set;
In the city of dreamy spires
Where but yesterday we met.

To-night as I watch the afterglow
I dream of other days,
Recalling Osler's kindly arts
And his ever gentle ways.
He never missed a chance to say
A word of cheer to me,
Encouraging my efforts,
As restless as the sea.

I fain again would call to life
The golden hours we knew,
The helpful lead he ever gave
To those who dared to do.
Once more I seem to hear him urge
To fight some ill or ague,
His rallying cry in old McCoy*
To end the Great White Plague.

Again we met in Baltimore†
To dedicate to all
Afflicted with some mental ill
The Phipps Memorial Hall,
A noble gift, indeed the best
Of many a charity,
A wondrous realm of human skill
Is the art, psychiatry.

Sir William in his happiest moods
Looked forward to the day
When ignorance and quackery
At last would pass away;
When medicine triumphant,
The best of thought and will,
Would serve the needs of all mankind
By curing every ill.

* February 1904. † April 16, 1913.

When Sir William left for Oxford
I felt that he had found,
The ideal place to realize
Aims lofty and profound.
It was a noble setting
For a truly noble life,
This dreamland seat of learning
Removed from worldly strife.

'Twas here we talked of men and books,*
Of medicine and art,
Of finance and of politics,
For all are but a part
Of life's transcending mystery
And ever-changing scene,
From peace to war and back to peace,
Sweet, beautiful, serene.

In a corner 'midst the bookshelves
I found treasures rich and rare,
Old Browne's "Religio Medici",
And his critics, mostly fair.
The "Dance of Death", by Holbein,
A great man of a time,
Recalled in fervvent discourse
By Sir William, near sublime.

In the Halls of "Corpus Christi",
In "All Souls" and "Oriel",
Sir William was as much at home
As in the land he loved so well.
In glowing terms he would recall
Some function or some feast,
Or praise the architecture
Of "St. Peter's in the East".

I never knew a soul so rare,
A mind so far above;
The sordid ways of human life
The death of faith and love.
He served a cause or human want
By many a generous deed,
He lived, in the words of the Master,
A truly Christian creed.

* September 13-14, 1919.

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The Role of Voluntary Societies in the Care of Public Health

John Riddington,
Librarian, University of British Columbia.

Read at the Annual Meeting of the British Columbia Hospitals Association, July 23rd, 1920.

AMONG the notable advances of the past half-century is the recognition, and the rapid expansion and extension, of the principle of community care and responsibility for public health. Among savage peoples the sufferer from physical or mental ailments was regarded as afflicted either by god or devil, and he was left, as is the sick or wounded animal by its kind, to recover, if the restorative powers of Nature could successfully assert themselves, or to die, should these fail.

At an early stage of civilization the diseases of afflicting mankind became the subject of study, and in the long centuries of human progress there slowly arose the sciences of medicine, developing from incantation, empiricism and quackery to what is to-day in some of its aspects, a science as exact and unerring as mathematics. But until within recent years both the knowledge of and responsibility for, the physical care of mankind, was considered the special duty, as well as the sole prerogative, of the medical profession. There was an utter absence of general public co-operation as to the general care of health in any organized or recognized form.

Doctors, from a mistaken sense of their privileges, looked with a certain measure of suspicion on such few efforts as were made to supplement their services by non-professional aid, and, truth to tell, some of the earlier attempts to enlist the co-operation of the laity were not of the kind to justify enthusiastic professional encouragement or support.

The only direction in which for many years the general public could work in conjunction with the medical men in the work of public health, was by provision of more ample financial means to enable them to enlarge their sphere of usefulness. By religious bodies and private benevolence money was contributed for the establishment of hospitals and related institutions. The benefits of these becoming more and more apparent, they were aided by grants from cities and towns.

The basic facts of public health became at length matters of more general public knowledge through the publicity given them by a newspaper press they every decade became a larger factor in civilized life as the result of more general education and intelligence.

The mortality that resulted from ignorance of proper working conditions in the revolutionized industrial and economic conditions that came in consequence of the factory system resulting from the invention of the steam engine and the adoption of power machinery —the mortality that came from congestion and the slum, from the exploitation of child labour, from occupational diseases—the terrible toll of tuberculosis and infant ailments—these things became more generally known, and their grim significance in the national life somewhat understood and appreciated.

City and state governments, being reflections of the citizency appointing them, began to take cognizance of these conditions, and there was thus gradually built up a realization that the care of health was a responsibility no longer to be wholly assumed by medical men, but that it was also one of the obligations of governments. At first concerned almost solely with the control of epidemic and infectious diseases, this newer function of government has extended and expanded in scope, until at the present time there is, in the more advanced countries, hardly an aspect of the physical welfare of the community that is not accepted as as much a part of governmental responsibility as national defence by army or navy, or a postal system, or a municipal fire brigade.

This was a notable advance, but the individual citizen had little or no more personal share in the new activities than in the days where epidemics were regarded as visitations of God, and the medical profession fought the fight against disease alone and unaided. The ordinary citizen reported diphtheria or measles, submitted to isolation when infectious diseases afflicted his household, had his children vaccinated, their eyes tested and teeth examined—refrained, sometimes much against his will—from putting them to

work before prescribed ages, and paid, with more or less cheerfulness or reluctance, the taxes the new fangled health service necessitated. But while benefiting, with the community at large from the gradually improving conditions, that became more and more evident as public health service developed, he saw no necessity, nor manifested any desire, to participate in the movement that each succeeding census showed was creating superior standards of physique, reducing mortality, lengthening life, and generally broadening the basis of human welfare and happiness.

The beginnings of community co-operation in the cause of public health first became general in the early days of the century. When the Great War broke out six years ago, there became manifest a widespread—indeed a universal—desire, a desire that amounted to a national and individual passion, that all that thought, labour and money could possibly do to give whatever of help or comfort was possible to our brothers, fathers, husbands, and sons who represented us in the firing line, should be provided. No sacrifice was too great either in toil or in treasure, if the lot of the nation's representatives on the battle lines could be lightened. In less than a week from the outbreak of war, the Canadian Red Cross, for years a moribund institution, sprang into national activity, and soon there was not a village or hamlet in the wide Dominion where women were not knitting, sewing, and making surgical dressings. If the scope of to-day's discussion permitted, the story of the Canadian Red Cross during those five terrible years might be sketched, at least in large outline. It is a glorious story, that may well make tingle with reverent gratitude and patriotic pride, not alone every Red Cross worker, but every son and daughter of Canada..

Hitherto, un-thought activities were month by month grafted on to the recognized scope of Red Cross work, and behind this work, and its new subsidiaries, supporting and energizing it, making it effective, national, colossal, were literally thousands of volunteer organizations, some connected with churches, others with fraternal societies, others devoted to particular military units, and yet others organized for special needs, but all co-operating in a common humanitarian and patriotic cause, and each rendering some needed element in support of the nation's military effort. And as the struggle grew more protracted, and hope of victory was deferred; as the lengthening casualty lists were issued, and men shook hands in silent sorrow with war-bereaved friends, there grew up in Canada, and in every nation at war, a sense of community care, of per-

sonal as well as national responsibility for those on whose behalf we laboured. And as we worked we came to realization—a heartening relization—that we were really doing something to help. We found joy in the consciousness that the care of our men was not merely the charge of an impersonal government, but of ourselves, and the sense of inward satisfaction that came from the knowledge that we were doing our share to discharge these obligations stimulated us to greater sacrifice, more active industry, higher endeavour. It was natural, inevitable, that this quickened and aroused sense of kinship, of personal responsibility should be extended, even during the War, to other worthy objects not essentially military. There never was, in the whole history of Canada, so widespread and general a sympathy for all worthy causes, moral, mental or physical, as during those years when Freedom was in peril of perishing from the earth.

This quickened consciousness exists to-day, despite all we may hear of "Reaction," due to the disappointed hopes that sustained us through those dark and terrible years. The War has accustomed us to co-operation in countless directions by voluntary societies of every imaginable sort. Many of these voluntary societies have disbanded, others are disintegrating, but many of them still exist, and, realizing the effectiveness of their co-operation in war-work, are to-day looking for new fields in which their aroused sympathies, their effective labours, can find benevolent expression. Many of those that are moribund could be resurrected into active, effective agencies if a worthy cause were so presented as to show a real need. Why cannot these organizations, these voluntary societies, be enlisted in some of the various phases of the cause of public health? Why should not these great reservoirs of human sympathy and human energy be diverted into these new and needed channels? The menace that necessitated the whole Dominion springing to arms is, we believe, finally crushed; to all present seeming we can look forward to coming years of peace. Can we not provide a permanent outlet to those instincts of generosity and helpfulness that found such magnificent expression between 1914 and 1919! Ought not this fine experience to be continued? Must it be wasted, its lessons forgotten and men and women who have learned the satisfaction of helping others go back to futile and selfish activities? Cannot the strong still continue to bear the infirmities of the weak, and embark on a new ministry of love and service?

Some of our voluntary societies are already doing this. Foremost among them is the Red Cross, which, from an organization

designed solely to help soldiers in the field, is to-day undertaking a programme totally different, but equally patriotic, equally necessary, now that "The war drum throbs no longer, and the battle flags are furled." It has secured from the Canadian Parliament changes in its charter that authorize it in days of peace to undertake, on its own initiative, or in co-operation with governments and medical authorities, a public health programme that justified nation-wide support. Here in British Columbia, the Red Cross is co-operating with the staffs of our mental hospitals. It has given appreciative financial assistance to the Victorian Order of Nurses; it has undertaken to establish a system of Red Cross Public Health Nurses in sections of the province remote from hospital or medical care—a service that is co-operating with the school authorities, and already doing valuable service in Soldier Settlements. It organized a convalescent camp at the seashore, at which hundreds of soldiers, weary of long months of hospital routine, were re-heartened and reinvigorated, and many cured. It has undertaken educational leadership in the cause of public health, having obligated itself to maintain for a period of at least three years, a chair of Public Health in the University of British Columbia—the first chair of its kind on the continent to be maintained by any voluntary society. It is looking forward to enlarging these services, and originating others, as means and opportunities permit.

What are the results of these new activities of the Red Cross in British Columbia? Not the least important, from its own point of view, is the fact that the society is not disintegrating, but is still an active, energetic organization, with aims to be accomplished that summon and challenge the fine qualities so splendidly demonstrated during the War. Should, unhappily, War again break out, the B.C. Red Cross will be ready; the organization will not, as in 1914, have to be created under the dreadful urge of instant necessity. Should another disaster, such as that that overtook Halifax, occur—a serious mine accident—a powder mill explosion, an epidemic—the Red Cross will be ready for service at a moment's notice. Its personnel, its supplies and equipment, its moral and material resources, can at once be turned from its normal avenues to the channel of the new emergency.

And while in time of peace the Red Cross is thus prepared for War, of what far-reaching and permanent benefits, to the district, the Province, the nation, are the new public health activities that keep it in conditions for urgent and military service? The Red Cross is helping reduce the terrible number—35,000 a year—of

babies who die in Canada because of neglect, indifference or ignorance. It will help lessen the thousands of Canadian mothers who die every year for lack of proper pre-natal care and attention in time of confinement. It will lessen, proportionately, too, the greatly increased number, who suffer preventible illness or life-long impairment of health. Canada's yearly tuberculosis toll is 8,000—one-quarter of all who die between twenty and fifty are victims of the Great White Plague. We can greatly reduce this drain on our national vitality, and such services as the Red Cross has begun to render will assist materially in so doing.

Behind the battle lines in every army are the reserves. In the fight for lengthened life, better standards of living, sounder physique, the same holds true. Our medical men, our hospital staffs and nurses, our research investigators, with the hospitals or laboratories, to which they are attached, constitute our front line. Close behind these are our Boards of Health, our municipal and provincial governing bodies, that by authoritative regulation and compulsory or optional education, prevent much of the disease formerly regarded as inevitable. Co-operating with both, there is room for unlimited voluntary effort of the widest variety of value and interest. From widespread education of the fundamentals of public health to the actual and practical technique of health service, for both sexes and all ages, and for almost every variety of mental and physical disability or affliction—the field is wide enough to engage some aspects of every citizen's personal interest and activity. The more varied the needs sought to be met, and the more numerous those engaged in the work, the more quickly will the principles of public health be understood, the more thoroughly they will be appreciated, with resulting benefit to the community, the nation, the race. Every hospital, every health institution, every nursing organization, not alone at headquarters, but in every locality in which it operates, should have one, or more, according to its need and scope, volunteer societies seeking and finding means to reinforce and supplement the public work it is performing, to buttress it in public confidence, and thus make its activities more effective and more widely known.

These volunteer organizations should have representation on the executive or governing boards of the services they assist, and every means possible should be adopted to stimulate the interest of the members in the work they are aiding.

I am of the opinion that the present is an opportune time to enlist the active help of volunteer societies in the cause of public

health. From sea to sea knowledge of physical disability was never so exact or so general—that was among the fruits of the War. Nor was sympathy with a progressive health programme so widespread or so active. Nor lastly, were the means to make a notable advance ever so available as at the present time. For almost every item on a progressive public health programme little or big bands of men and women can be organized, if they are not already in being, that will render in days of peace the same devoted, conscientious, intelligent, effective help that they gave their country and its cause in the days of war.

Nursing Standards

MISS HELEN RANDAL, R.N.,
Registrar, B. C. Graduate Nurses' Association.

A FEW years ago, to talk on nursing standards would, in one sense, have been a very easy matter, for there were no standards, and really at the present time, while the name is much in evidence, nursing standards are mostly on paper and in the air. So far as British Columbia is concerned the only real attempt at a standard, either of educational requirements, curriculum or what constitutes a training school so far as length of course, departments, etc., has been obtained through the efforts of the Graduate Nurses' Association of British Columbia since its incorporation under the "Graduate Nurses' Act."

At the present time, nurses and their standards, educational, both as regards hospital and pre-hospital periods, practical and ethical standards of the students and graduates are much in the public print and in the public mind, and here we find the two extremes which one is apt to find in matters of this kind. To me, who will try to justify the middle course, will probably come the objections of both extremes—but these thoughts are the result of considerable experience, observation and an especially good opportunity of seeing the real working plan of the nursing schools of this province in my cursory view of them during the "training school survey" of 1919-1920.

To begin with, at the bottom as one should, what are we planning that we require a standard for? Women, well educated, well trained in the care of the sick, with poise, moral courage, far rarer than physical, good health and properly equipped for private work, public health service or executive positions. Just now we hear a great deal of the shortage of nurses, the terrible condition of the women left without nursing care, and a general indictment of the nursing profession as it now is. We are told that we are not willing to go out into the country, are not willing to take all kinds of cases, are not willing to do housework when nursing, and that we charge too much and do not want to work long enough hours. Surely a long list of things that must be explained satisfactorily or other arrangements made to meet.

To begin with, I state positively that I do not believe there is such a shortage of graduate nurses as we are led to believe. That there is a great shortage in the hospitals, which are growing rapidly and are trying in almost every case to cover the shortage of domestic help with the plea of shortage of pupil nurses, I do not deny. Hospitals enlarge their boundaries without counting in the least for the increase of, or accommodation for the extra nurses, and the real shortage which is in the domestic end of the work, both inside hospitals and in the homes, is sought to be done by the nurses. As to the situation outside, we must remember that during the last year large schemes, which have been lying dormant, suddenly sprang to life, and there was at once a cry for nurses to fill the public health field all over this continent. If this matter could only be taken in a less hurried way, nurses given a post-graduate course to enable them, by increased special knowledge of the social end of the work, to fill a larger field than the nurse without this course, and the field held open for them until they do, it would not be long before this shortage would be filled.

It is ignorance, more than anything else, of the work and the needs, that keeps the number applying for such positions small in comparison with the need. Some will tell you that the way to start anything is just to start, but I venture a doubt as to that being the best way. Many a splendid plan has been spoiled by the unskilled taking charge of it, and the right foundation to everything is to me the main thing. It is a little crumb of comfort to the nurse who gets tired of hearing her profession spoken of as being one that prefers the loaves and fishes of civilization to the primeval field. I read in an American journal a short time ago that the shortage of the "cross-road doctor," as it was there expressed, was causing much thought on the part of those interested in public health in rural communities. It was stated, as we well know it to be here in British Columbia, that the physicians crowded into the cities and places where the practice was easier, to the neglect of the rural places and people. The chief difference between the comments on this condition and that of a simpler complaint laid against the nurse is that there never has been, so far as I have discovered, any attempt made to point out that in many cases a second-grade physician would fill the situation and, in some cases, the patients might do as well.

That brings me to one of the extreme arguments or plans for the relief of the situation of lack of care of the sick and his household. The point that seems to have escaped most people discussing

the situation is that they are utterly confusing two distinct things. One—the shortage of nurses, and the other, the far greater shortage, and one that has nothing to do with nurses, nursing or nursing standards—the real shortage of domestic help. In this connection may I quote from a report made on giving up the nurse attendants in Cleveland after a two years' trial:

At a recent meeting of the Provincial Association, a well-known doctor spoke to us on the nursing situation, and he, a man of the highest type of medical man, told us of the nurse that would satisfy him. I am sure he thought he was sincere, but I venture that he would be the last to use this woman as a substitute for the trained nurse. This low standard, which is being presented as the extreme, means that the woman need have little preliminary education—will have a year's training, and then—well, what then? At the last convention of the Canadian National Association of Trained Nurses which met here last summer the motion was endorsed by them that they were not opposed to nurse attendants "if the public could be properly safeguarded." As you may have noticed in the quotation I gave, they showed that the public was not safeguarded in Cleveland. Now the only safeguard that can be made is to monopolize the name "nurse" for the graduate only, and as custom has allowed this to be used for all nursing, even those who never trained at all, this seems impossible. The next possible step is to license every woman nursing, no matter whether an R. N., graduate nurse, specially hospital trained or practical, according to her qualifications, and then see that she is prohibited from doing anything outside of this. The supervision required is the next stumbling block and where is she to be trained, and that is one that I think should convince anyone of the impracticability of the scheme. If you place them in hospitals where there is no training school, then you must have more graduates for the critically ill and for supervision. It is out of the question, unless you want to kill the standing and popularity of your training school, to mix the two forms of training. And how long do you really think she will continue to be a "nursing housekeeper," and "trained attendant" or what not? She will, as was shown recently, frequently charge as much if not more than the graduate nurse, so the financial help to the moderate purse is not arranged for. It will kill all desire on the part of the young women to enter a profession where they are not to be protected, even as they are now, and so the situation gets worse, not better.

The opposite extreme, insist that the pupil have a high school course—that the lectures and theoretical part of her training must

be most complete, and it is hard here to show that these are not praiseworthy objects. Surely everyone recognizes that all other things being equal, the more highly educated a woman is in all walks of life, the better she is fitted for her work. But the danger lies in making this standard of pre-hospital education the one essential for entrance. There are not enough young women finishing their high school course to fill all the vacancies in the hospitals; therefore, the woman at the head of the school with this standard fixed, is apt to consider the scholastic ability rather than the vocational or physical standard.

The work done by the Graduate Nurses' Association of British Columbia in interesting and persuading the girls to finish the high school course will, in time, help to raise the standard of admission by presenting more to choose from of properly educated women. The Educational Department of our Province must help us, I think, in providing through its technical schools a part, and not a small part, of the education needed in the nurses' profession. This, with the combined Domestic Science course should help much to educate the girl for her future before she enters the hospital. As to the standards for curriculum—ours has been approved by Nurses' Associations and by your Association, and while it looks alarming, without scheme of affiliation which is working, makes it less of a bug-bear than one might think. Still here again, I belong to the middle path, for there is a distinct danger to any standard of efficiency where the foundation is not secure. I should infinitely prefer to prepare a nurse for her R. N. examination who had studied less and that more thoroughly, than the one who skims over the surface and who glibly tells you of laboratory and pharmacy periods, whose chemistry is fine in class, but who cannot tell you the chemical effects of the simplest mixtures of acids, alkalies, etc. Please bear in mind that I am and always have been working towards the highest educational standards for pupils, but if the educational standards of the special training for a nurse cannot be obtained in the school to which she applies, what is the value of her pre-hospital education?

The physical standards are very essential, and here, too, the hospitals have been most neglectful. The great cry that nursing breaks down the young women who enter is not due to the work half so much as to the careless way in which girls who had no business from a physical standpoint were allowed to enter and naturally were unable to stand the work, and dropped out "broken down with the training." In the face of strong opposition from friends, rela-

tives, and from the girl herself, a strong stand must be made that only young women with the required physical standard will be accepted. Then, after educational, physical and training standards are compiled with, there is the greatest standard of all, that of the woman herself—the vocational and ethical standard. The Chancellor said lately to the 1920 class of the Vancouver General Hospital that "nursing was an art." It is that, indeed, and very much more, it is a profession, and, above all, a vocation.

Nursing standards will never be any higher than the source, and if the nurses we turn out have not the true vocational spirit, the spirit that does the work required with not only mechanical efficiency, but with the true spirit of service, then our other standards are of no use and the profession is doomed. Repeating the Florence Nightingale pledge will not make the graduate realize her duty and her privilege if through her course anything else than the highest ideals working out from the superintendent to the porter have been seen by ther. These young women absorb the spirit of the place where they spend three years of the most impressionable part of their lives, and it is up to all in authority to see that they see always that "the greatest good to the greatest number" is the motto of their alma mater. ,

It is of no use to talk of nursing standards if there is not first the foundation of the standard of the hospital who undertakes to call itself a school for nurses. No hospital has any moral right to take three years of a young woman's life and settle down to use her as cheap labour, for that is what it all comes to, if one removes the frills and furbelows from the situation. Can a hospital where there is no class room, no equipment, no woman with time, or in some cases the education, to teach these pupils, whose hours are so long in the wards that they cannot study, and whose classes are given only after this long day's work, whose departments of cases consist of usually a fairly good surgical department, plenty of obstetrical work, and that is practically all, call itself in honesty a training school for nurses? Can they honestly make the three years the length of stay in their hospital under those circumstances? Put it to yourselves and see if it is right. With affiliation ready, the small school gives an honest course if they provide enough equipment and class work for the two years, and then give those faithful young women the third year to gain what they cannot get in their own home school.

Splendid training is given in these small schools where there is the desire to act up to the nursing standards required, sometimes

better than in the large ones; and my ideal is that there should be an exchange of pupils between the large and small hospitals; those from the large gaining quite as much as those from the smaller in the change. It can be done as affiliation has been done, but not till all selfishness in the individual school has been blotted out and a determined effort made to produce the type of nurses that British Columbia wants. It would mean great work, but it would be worth it. Whether in the form of the central training hospital or with several of these in our scattered province, the thing is feasible, and must come, to get the best effects from our schools.

1. To sum up, we should require at least one year's work in high school—more if possible, as the pre-educational standard.

2. No school allowed as such to train pupils till the standard equipment, mechanical and teaching, is present.

3. No young women with low physical standards allowed to train.

4. A determined effort made to bring out the ethical side of the profession—the spirit of service and of altruism, never losing sight of the fact that the responsibility of the school is great as to the moral and ethical affect of the three years spent there.

Preventive Medicine and the General Practitioner

W. EGERTON GEORGE, M.D.,
District Officer of Health.

Paper read at a meeting of District No. 9, of the Ontario Medical Association, during a trip on the Steamer Northern Belle on Lake Nipissing on August 12th, 1920.

IT is a well known fact that the general practitioner of ten or more years' standing, who after all is the back bone of the profession, rapidly loses the viewpoint of those who are occupied with preventive medicine.

The reason for this may be found without a great deal of search. The physician obtains his revenue by administering to the sick. He always has his ear to the ground for the newest and best ideas on treatment; and he will invariably be found up to date in this line. To maintain his grasp on this branch of the profession he finds that he has his hands more than full, as he has but little time for reading. Therefore, to render the most efficient service possible, and also to protect his own interests—for self preservation is the first law of nature—he must keep his treatments up to date or fall in the race of competition. The authorities on treatment are not the authorities on prevention. For this reason the best works on preventive medicine do not come within his view.

Some of the commonest fallacies may, with profit, have our attention. I propose to set forth some general principles and apply these to three or four common examples, such as typhoid, scarlet fever and diphtheria.

1. The acute infectious fevers. (Not all infectious diseases, for we must eliminate the pyogenic infections, venereal diseases, the insect borne and rabies.) are transmitted from one to the other in the fresh moist discharges of those suffering from the various diseases, or of those harboring the organisms as carriers. These discharges are from the mouth and nose, and the bowel and bladder. They must be conveyed to the mouth and nose of the victim, for there only will they find conditions favourable for growth. The transference is known as contact.

2. The organisms do not multiply in nature or in any but the human animal. There are possibly one or two exceptions which are not common in the practice of the average physician.

3. Pathogenic bacteria which do not form spores when they become dry enough to blow about in the dust are incapable of producing infections.

4. Pathogenic bacteria in nature, rapidly die from the time they are first discharged until they are all extinct. They are rapidly killed by drying, sunlight, saprophytic organisms, heat, chemicals, atmospheric pressure, etc.

From what has already been said, it is evident that these acute infections are diseases of persons and not things, and that when once removed from their warm, moist, even climate,—their natural habitat—into the sun and air their death is close at hand. So much so is this the case in civil life, and so seldom do they reach a dark place that is warm and moist, that terminal disinfection is of no great value and the incidence of any epidemic disease is not greater when terminal disinfection is omitted than when it is carefully performed. Chemicals for terminal disinfection are expensive and valuable, and we expect you to educate the public against the squandering in useless effort these costly chemicals, which are demanding a price much above what they should be because of this waste. What has been said must not be construed to mean that fresh, moist discharges, and the articles that contain them, are not to be disinfected during the course of the disease. On the contrary, it is intended to emphasize its necessity.

TYPHOID.

How often has the pig pen, stable or manure pile been held to be responsible for a case of typhoid. Now, if you will recall the general principles set forth above, you will remember that it was stated that this disease can only be produced by the transfer of infected discharges of the human bowel and bladder. Therefore, unless the hog pen, stable and manure pile have been common places for the deposit of these discharges, they must be acquitted as innocent of the crime.

The distance water will run before it will purify itself is another question closely associated with typhoid. This depends upon the rate of flow, the clearness of the water, and the amount of sun. Roughly speaking, typhoid organisms will live in clear water in the summer, about six days; while in the winter, or cold weather,

about three weeks. The time required for a stream to purify itself is, then, the distance the water in the particular stream will flow in six days in the summer and three weeks in the winter.

Ice supplies are nearly always safe as freezing squeezes out 90 per cent. of the bacteria, while not more than one or two per cent. is left at the time the ice is marketed. During the freezing process, if water comes in over the top of the ice, it becomes impossible for such water to shed its bacteria in the freezing process. Ice of this kind should be discarded, if taken from a dangerous supply. With the exception of the menace just set forth, pure, clear ice is as safe as filtered water, and you would be well advised, if at all suspicious of the water supply, to depend on the melting of clear ice for drinking purposes.

While dealing with typhoid, let me recommend that you avail yourselves of the use of the laboratory, which is shortly to be established at North Bay. Make your diagnosis certain by the use of blood cultures, taken from the patient in the early days of the symptoms..

Scarlet Fever.

As a general principle, mild epidemics are much more difficult to control than severe ones. This was well exemplified in the pandemic outbreak of small-pox, which has been so prevalent during the past year. The epidemic of scarlet fever at Fort William, which has been running continuously since April, 1917, is another case in point. Scarlet fever is one of the most difficult diseases with which we have to deal, because at least one-third of school scarlet fever is without the rash, with possibly no more symptoms than a sick stomach for a few hours accompanied by sore throat. We have no specific in the handling of the disease and the evidence goes to show that we are unable to control mild forms. If there are no laboratory methods by which the mild case can be recognized;—there are such cases which are so mild that the patient makes no complaint—how can we control it? At present we are helpless if the child's symptoms are so mild that he does not report to his mother. Some observers state that a study of recent outbreaks in England seems to show some relation between the prevalence of scarlet fever and the prevalence of fleas; but I hardly think that sufficient data has been accumulated to make this theory acceptable.

Scales occupy a prominent place in the mind of the general practitioner as a means of spreading the exanthemata. With the possible exception of small-pox scales are now known to have nothing to do with transmission unless contaminated with the fresh, moist discharges of the mouth and nose mentioned above.

There seems to be sufficient evidence to indicate that the disease is caused by a strepto-coccus; but the results from vaccination have been very inconsistent. Operations on the tonsils and appendix during epidemics are frequently followed by a rash, causing much unpleasantness to the general hospital, because of the isolation and quarantine. The operation has apparently given an opportunity for the growth of the organism which was unable, without this assistance, to invade the system.

Hospitalization would appear to be of little value, at least it has failed to control in the very places where the best opportunities have been available to control by this method. It appears that after the patient has been removed to the hospital the mild secondaries occurring in the household are liberated after the incubation period (ten days in Ontario), without being recognized. If the whole family, with the exception of the bread-winner, is quarantined in the house for six weeks, and possibly longer, should complications develop, no opportunity is afforded the mild secondary which is not recognized to escape while still infective. This mild unrecognized case is, undoubtedly, the chief difficulty in the control of scarlet fever. I have seen examples where members of a family, who were quarantined for ten days and then liberated, and allowed to return to school, in which were other cases followed in the school room. In England the scarlet fever hospital has failed to irradicate the disease, although that was the result anticipated.

A six weeks' quarantine, which is the law in Ontario, allows about 20 per cent. of slip; which in other words means that the uncomplicated case is still infective when he returns from the hospital in about 20 per cent. of cases. The secondaries usually develop within three to six days after the patient returns from the hospital.

Diphtheria.

Contrary to scarlet fever, diphtheria is a disease in the control of which the laboratory is of paramount importance. The laboratory supplies us with the diagnosis, provides the specific treatment, and in the Schick test we are able to pick out the susceptible and

immunize them. It is to be regretted that with our free serum the death rate should still be much above that for scarlet fever. The chief responsibility lies at the door of the parents of children suffering from the disease in that the physician is not called early enough to make the specific treatment effective. The physician, however, is to some extent, responsible, since he has not learned the lesson which lies in the difficulty of diagnosing diphtheria from tonsillar and other throat infections. As long as the physician displays such confidence in his powers to diagnose from clinical signs, some will have to pay.

Laryngeal forms present serious difficulties from the standpoint of treatment; for unless the specific is administered very early,—within the first three days—it is of little value. It is not common to have the patient under observation so early, unless it happens to be a secondary case in a family. In this class sufficient anti-toxin should be administered in one dose and as early in the course of the disease as possible. In this class of case use the anti-toxin intravenously. Let me strongly recommend that you avoid unnecessary mistakes by the frequent use of the laboratory which is at your disposal without cost.

I should like to give some little attention to venereal diseases and tuberculosis, and also to discuss measles and whooping cough, but I am required to stay within ten minutes. In conclusion, I am impelled to say that you are failing to report your venereal diseases and tuberculosis cases. It is easy to prove this, especially with tuberculosis, since there were more returns of death than cases reported, from this district during the past year. The Provincial Board is taking venereal diseases very much in earnest and is spending $115,000 within the year in order to obtain effective control. The Province has supplied an Act which is a fair piece of legislation. The Board, then, has no alternative but to insist on consistent prompt returns from physicians. They seek your co-operation and are willing and open to any suggestion that will obtain it. Parliament has seen fit to apply serious penalties, but I am sure the Provincial Board will not resort to these if any disposition is shown to mend your ways. Let me solicit your assistance in perfecting these returns.

A Plan for a More Effective Federal and State Health Administration

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(*Continued from the September issue*).

There should also be advanced teaching in all that has reference to town planning and housing. If diseases are to be effectively prevented, by the gradual elimination of the conditions which undermine health and shorten life, it is self-evident that priority of consideration must be given to principles and methods of housing hygiene, school hygiene, factory hygiene, etc., rather than to immunology and even advanced bacteriology, which, though essential in a course on hygiene and public health, are nevertheless of secondary importance to measures and means aiming specifically at the control of the environment and the removal of conditions inimical to life and health.*

There is no provision in the Johns Hopkins School of Hygiene and Public Health for race pathology, nor for tropical hygiene and sanitation, two extremely important branches of public health administra-

*Of course, all of these subjects are of the first importance in the curriculum of medical schools, preparing students *for both* the practice of medicine and the administration of public health. The point raised here is that overemphasis is placed upon exceptionally exacting branches of science, rather in the nature of research than in that of administrative activities. The practical question as to the avoidance of infection is readily within the full understanding of a person of average intelligence, if the facts are set forth with clearness, as, for illustration, by Dr. Chas. V. Chapin in one of the Harvard "Health Talks"; but a full understanding, for practical purposes, of the whole question of infection and resistance requires an amount of mental concentration and special aptitude quite outside of the possession of the average graduate in general medicine or public health. A superficial knowledge of such subjects as the problem of virulence, inherited and acquired immunity, toxins and antitoxins, etc., is practically certain to lead to profound errors in public health administration, as best illustrated by the experience gained during the recent influenza epidemic. Since the course, at best, must be one of limited duration, it would seem that the education of the future health administrator should be concentrated rather upon practical than upon theoretical and upon non-medical rather than upon medical questions. There is much danger of superficial knowledge of highly involved medical matters being made use of to give ill-considered advice to the public, apparently demanded by urgent considerations. It would seem best to leave such matters entirely within the realm of the medical profession, or with those who as physiologists or pathologists, or otherwise, are concerned primarily with bacteriology, immunity, and the related sciences.

tion, broadly conceived on principles of prevention, rather than on those of quarantine and measures of correction after the fact. There is also no provision for physical anthropology, as the very basis of all that is required in modern health administration in connection with the physical examination of school children and of applicants for factory employment. The central thought throughout seems to be the quarantine control of infectious diseases and highly specialized branches of research work in connection therewith.

Nor is there adequate provision for sanitary engineering in the accepted sense. Simply as an economic problem, the most effective and satisfactory means of dealing with town and house refuse, sewage, sewage disposal, water and water supplies, the disposal of the dead, etc., are all questions of the first importance in an effective health administration, having for its main object the prevention of disease occurrence, rather than the control of contagious and infectious diseases subsequent to outbreaks in epidemic form.

It is somewhat encouraging, however, to meet with a better appreciation of the urgency of statistical knowledge and training in practical statistical analysis and interpretation. There is a lamentable lack of qualified ability among public health officers in this respect, although the use of statistical information has enormously increased during recent years. It is to be hoped, however, that no attempt will be made to introduce extensively the use of mathematics, although provision for what is called the "advanced statistical theory" is made in the curriculum of the Johns Hopkins School of Hygiene and Public Health. Regardless of the exceptional value of the application of mathematical principles to statistical analysis in connection with medical and public health problems for general purposes, such knowledge and methods are more likely to prove a hindrance than a help. There is only a limited field for actuarial mathematics and the new application of statistical methods, such as have been brought forward by the Galton Research Laboratory, etc. What is required, and most urgently so, is a better understanding of statistics in the more restricted sense, and of the use of standardized methods of record-keeping, tabulation and analysis. The same conclusion applies to more rational methods of graphic presentation. At the present time practically every health officer follows his own statistical ideas and there is in consequence a deplorable want of uniformity and lack of comparability in the results. The prerequisite technical and higher mathematical knowledge of a course in "advanced statistical theory" is generally not within the possession of the average applicant for admission to a School of Hygiene and Public Health, nor is there more than a remote possibility that such knowledge will ever

be required for practical purposes in the performance of actual administrative functions in the efficient conduct of a Federal, State or municipal health service.*

*As early as 1866 Dr. Wm. Farr, F.R.S., in his report on the cholera epidemic of England, made use of the mathematical theory to subject the so-called "zymotic theory" to a critical examination. In a similar manner, Sir Ronald Ross has applied mathematics to malaria research. Perhaps the best known is the combined research work of Elderton and Pearson in their essay on the "Relative Strength of Nurture and Nature" of the Galton Laboratory for National Eugenics, a subject preceded by a more extended investigation of the "Intensity of Natural Selection in Man", by E. C. Snow, M.A. Highly specialized research work of this nature must, however, be considered entirely outside of the practical field of a large majority of health administrators, concerned with the solution of problems of immediate public concern. The required preliminary training in higher mathematics will, as a rule, be found entirely too exacting to leave the necessary time for serious and sustained thought upon questions of administrative policy. In fact, it has been argued by no less an authority than Sir Wm. Hamilton that training in higher mathematics may prove harmful to intellectual and scientific pursuits of a more practical nature. The fact that higher mathematics have been found useful in the furtherance of highly specialized branches of biology and eugenics is not an answer to the question as to which subjects in a course on public health should be given priority for obvious reasons of public concern.

To be Continued.

A Public Health Conference

J. J. MIDDLETON, M.B., D.P.H.

A UNIQUE event in the history of Public Health work in Ontario took place on Friday, October 1st, at the Parliament buildings, Toronto, when a conference was held under the chairmanship of Dr. J. W. S. McCullough, Chief Officer of Health for Ontario. This conference was the first of its kind held here, in that it included not only the District Officers of Health from the seven districts into which the Province is divided for Public Health purposes, and the Public Health Nurses who will be actively engaged in these districts, but also representatives from the voluntary and non-official bodies who are organized to co-operate with and assist the Provincial Board of Health.

Dr. McCullough, in his introductory remarks as chairman, welcomed the various officials and representatives, and, after outlining the work that was being planned, invited suggestions and opinions as to how all the associations interested should best work together in furthering and promoting Public Health activities in this Province.

The Associations represented were: Ontario Medical Association, by Dr. G. Stewart Cameron and Dr. F. W. Marlow; Graduate Nurses Association, by Mrs. Harris, Ottawa, and Miss Hanson, London; Ontario Branch Red Cross Society, by Mrs. Plumptre and Miss Bickle; Victorian Order of Nurses, by Mrs. J. C. Hannington, Mrs. Vincent Massey and Miss Edith Campbell; Mothers' Allowances Board, by Mr. Frisby, Secretary; Ontario Women's Institutes Federation, by Mrs. D. C. Wilson, Parkhill, Miss Katharine I. McIntosh, Brampton, Mrs. C. H. Horning, Hamilton, Miss Margaret Scott, Agincourt and Mrs. R. Cronk, Pickering; Women's Institutes Branch by Dr. Margaret Patterson and Miss D. M. Sutherland; Department of Education, by Miss Jamieson; Department of Public Health Nursing University of Toronto, by Miss E. Kathleen Russell; Ontario Local Council of Women and Ontario Imperial Order Daughters of the Empire. Dr. G. Stewart Cameron, of Peterboro, brought the good wishes of the Ontario Medical Association, and although he did not know in what particular way the O. M. A. could as yet give any definite assistance as a body, he assured the

conference that the association would co-operate with the Provincial Board of Health in every way possible.

That Medical Inspection of Schools should be under the jurisdiction of the Provincial Board of Health was a point emphasized by Dr. F. W. Marlow, representing the Ontario Medical Society. This is an important suggestion and should be given official consideration in view of the lack of co-ordination that might result if there was a division of authority between the Provincial Board of Health and the Provincial Board of Education.

Mrs. J. C. Hannington, representing the Victorian Order of Nurses, made an eloquent appeal for co-operation between the official and voluntary bodies engaged in public health work in Ontario, recognizing that all activity in public health affairs must be done under the supervision of the Provincial Board of Health. Mrs. Hannington referred to the good work the V. O. N. had done for the past twenty years, and felt that under official guidance the Order could continue and even extend its sphere of usefulness as an auxiliary body. A practical suggestion made by Mrs. Hannington was for the provision of uniforms for Public Health Nurses. She was quite convinced from the many years of nursing experience that the uniform would help the nurses in their work in many ways, and make them easily recognized by the public.

Professor J. G. Fitzgerald, of the Public Health Department, University of Toronto, cited the need of voluntary organizations such as the Red Cross in supplementing the work of the Provincial Board of Health. He clearly explained that the assistance of a voluntary association such as the Red Cross was not necessarily of a permanent character in any district, and that its object was, by creating local interest in Public Health matters and by the formation of local committees, "to function itself out of existence." On the other hand there was much work, Prof. Fitzgerald explained, that the Red Cross could undertake in districts where the Provincial Board of Health had no activities.

All those present at the conference were actuated with one main desire to co-operate with and assist the Provincial Board of Health, so as to avoid overlapping and friction. Mrs. Plumptre represented the Ontario Branch of the Red Cross Society, and was enthusiastic regarding the work that could be accomplished in the interests of Child Welfare and other branches of Public Health activity. Mrs. Plumptre referred to the move that had already been made by the Red Cross in sending seven nurses to Toronto University for a special course of training in Child Welfare, to supplement the work

being done by the eight nurses now being trained for this work by the Provincial Board of Health.

Dr. Wodehouse, one of the District Medical Officers of Health, suggested as a plan for organizing a health campaign, to get local Boards of Health and the M. O. H. interested, also Chambers of Commerce, and local societies, as well as individual private citizens, who would interest themselves in the work. The first necessity is to get enough money to carry out the campaign planned. He also suggested the calling together of local and prominent Public Health Officials in whatever sphere, for a monthly meeting, which would take the form of a clearing house for grievances and prevent overlapping of their activities.

Dr. Nasmith also spoke of the value of the Red Cross as an auxiliary body in carrying out public health schemes.

One of the most important channels through which co-operative work will be done in connection with Maternal and Child Welfare, is the Women's Institute Federation. This organization of ladies, whose membership includes the most progressive and enthusiastic workers for social betterment in every community, has already pledged itself to co-operate in any scheme for Child Welfare that the Provincial Board of Health undertakes. Mrs. D. C. Wilson, of Parkhill, Ont., Chairman of the Federation, announced that they had already a "Well Baby" Clinic established in Parkhill in a two-roomed cottage, and that it was one of the centres of interest in the village. The afternoon meeting of the conference was a family gathering in which the District Medical Officers of Health and the Provincial Nurses met and discussed plans for the actual inauguration of the work that is soon to be commenced.

Social Background

Present Need of the Tuberculosis Campaign in Canada

DR. J. H. HOLBROOK.

Read at Annual Meeting of the Canadian Conference on Public Welfare, Hamilton, May 10th, 11th, 1920.

THE greater part of our knowledge of scientific medicine is a development of the last fifty years. In the nineteenth century, to quote Garrison, "the advancement of science was organized, and scientific surgery was created. The interest of 20th century medicine is again social. One of the most noticeable things about recent medicine is the fact that nearly every important advance that has been made is prophylactic, that is, comes within the scope of preventing the occurrence, the recurrence or the spread of disease."

So rapidly have advances in this branch of science been made that it is quite beyond the bounds of possibility for an uneducated man or woman, especially if he or she has given no special study to the matter, to keep abreast of the advance, and with health made for the greater part a commercial matter instead of a national matter, where the rich and poor alike are expected to purchase both the services of the physician and the means to recovery, it is little wonder that short cuts to health are taken, and that the patent medicine business and quackery are very prevalent. Primitive man instinctively looks for a cure for every ailment and is by nature susceptible to the unscrupulous, while quackery is not entirely outside the medical profession, for many a physician in the desire to hold his patients and thus retain them as a source of income, gives them what they expect to get instead of scientific service. In fact, to quote Garrison further, "It is the purely experimental status of actual therapeutics which opens a loophole for the modern quack. The very candour of scientific medicine gives him his chance, for just where the scientific physician admits his inadequacy, the charlatan is most positive. The tendency to consult quacks is analogous to a physician's liability to be deluded by wild-cat investments. Some of the most responsible doctors will always be in the hands of financial fakers, and some of the most responsible business men

will always be in the hands of medical fakers." In contrast to all this "the most enlightened physicians of to-day are advancing preventive medicine, which tends to do away with a great deal of medical practice." This is the test of the honourable physician, for "Certainly men who regularly render a large part of their services gratuitously, and are constantly striving to eradicate their own means of livelihood, cannot be convicted of being altogether mercenary."

Transmission.

Beside this survey of the present problem, from the psychological standpoint, it would be well to place a few of the principles that are generally accepted to-day with regard to the manner in which tuberculosis is transmitted. Many of the old ideas have proved to be almost entirely erroneous, as, for instance, the ancient belief in evil spirits and talismans, the more recent fear of night air, or the phthisophobia of a few years ago when many adults were afraid to come near an institution for the tuberculous for fear of infection. It is now believed that the most common method of transmission of the disease is from the open case of tuberculosis (usually an adult) to the child; and that while under proper precautionary measures the adult has very little to fear, the child, on the other hand, even with extreme precaution, can hardly escape infection if exposure is at all prolonged. It is known further that the younger the child the greater the danger of infection from exposure, and the greater the probability of the infection developing into widespread disease and death.

If, on the other hand, the child is past five years of age, and if the exposure is not too prolonged or the infection too massive, the child will either live to reach early adult years, when the disease may take an unfavourable course; or the child may entirely recover with the development of an immunity which stands him in good stead to protect against the more frequent exposures of adult years. This transmission from the open adult case to the child may be considered the most frequent manner in which the disease is spread, that ranking next in order probably being infection in childhood through food, the chief offender of the foods being milk from tuberculous cows.

A third factor to be considered, but less thoroughly understood, is the relation of the inhalation of bacilli with the dust from city streets due to the polluters of streets by spitting. Once considered

probably of first importance it would now probably be placed third in rank, though this may be because it is so difficult to get absolute proof. But undoubtedly, it is a menace to young children who play in the streets, and it is a habit at once so filthy and so easily prevented that it is almost impossible to understand how any persons who give the matter a moment's thought can allow themselves to become offenders. Against this the question of inherited tuberculosis can be dismissed with the simple statement that for all practical purposes it does not exist, though, on the other hand, the children of tuberculous parents may inherit a diathesis which render them more resistant to tuberculous infection than is the case with children from non-tuberculous stock.

Present Methods of Combating.

With an understanding of the manner of transmission of the disease, the next point to consider is that of the measures now being used to combat its spread. To put the matter briefly, Canada has perhaps as good an organization to-day for fighting tuberculosis as other countries have, and it greatly excels the organization of many countries. The central organization, which deals with educational work, is the Canadian Association for the Prevention of Tuberculosis. This Association has done excellent work in forming branch associations, chiefly in the larger centres of population and in circulating information and other useful literature; but it is terribly lacking in financial support with which to provide a sufficient staff, or a campaign to reach the masses of the people.

The Gravenhurst Sanatoria were among the first in America to be organized and have been steadily growing. They claim to be national in scope, and may well continue to serve the well-to-do from all this province, or even all Canada. To meet the needs of those whose relatives are unable to pay the cost of travel for frequent visits several of the larger cities have established local Sanatoria, and by their success have demonstrated the fact that for the great majority, Sanatoria near their own doors will always be the most serviceable. As a result there have been nine local Sanatoria established in Ontario, though two of these are used entirely at present for soldiers and one was recently burnt to the ground. The other provinces, while not as far ahead as Ontario, have yet made good progress chiefly along the line of provincial Sanatoria. Quebec has lagged behind, but the erection of a large new institution at Quebec City indicates an awakening in that province. The war,

too, has helped matters by about doubling the bed capacity of Sanatoria throughout Canada; and most of these, when no longer needed for soldiers, will continue permanently for the use of civilians.

With this system of Sanatoria there has arisen in these cities a more or less comprehensive dispensary system and a social service system for the visitation of the homes in which patients are discovered. In most cases these dispensaries are volunteer organizations separate from the health department, and in fact most have grown up as a result of the inactivity of the local health departments with regard to this infectious disease.

Conditions in Smaller Centres.

If these dispensaries and sanatoria were available for the whole or even the greater part of the province, conditions would not be so bad; but when you come to survey the organization in the counties and smaller towns you find that practically nothing is being done. The rule is that they have no dispensaries or clinics, no sanatoria, and that cases of tuberculosis from country districts are compelled to seek admission into sanatoria established by funds which their own municipality has had no share in providing. As a result of all these circumstances the majority only apply for such treatment at a time when recovery is impossible, and death within a few months or, at most, a year or two is inevitable. There are occasional notable exceptions, usually due to the presence in some community of a family physician who has developed a conscience and a technique which is keen for the diagnosis of tuberculosis in its incipiency; but these exceptions only point to the possibilities that are being almost daily neglected.

When one studies the actual conditions he is forced to believe that the people of the country and of the country towns, as a whole, show neither a desire to protect themselves by the organization of up-to-date public health work with clinics for diagnosis, nor sufficient of the Christian spirit of brotherly love to spend money for the treatment of the more or less indigent tuberculous among them, even in sanatoria provided by other people's money. In fact, the present system by which an indigent consumptive has to get assistance from a township council for maintenance in a sanatorium is so humiliating to the pride of the patient and the patient's family that, as a rule, the patient prefers to stay home and take chances. If he prefers to go to a sanatorium, paying his way, the financial problem leads to so much worry that he very often goes home discouraged

after a short period under treatment; the final result, apart from instruction received, being the same as if he had remained at home from the first.

This condition need not exist, for the townships of Wentworth County and of the other counties in which sanatoria are situated are gradually assuming their fair share of responsibility, and in so doing serve to illustrate the fact that it is education and a quickened social conscience that is required. But the whole province must learn that prevention of disease costs money, that health is to a considerable extent a purchasable commodity, and that any community will get just what it pays for. In other words, a city cannot be expected to raise money with which to build an institution for the treatment of the consumptives of the surrounding country; and if the country districts will not either get the money by voluntary offerings or by taxation to maintain their tuberculous patients in sanatoria, little improvement in rural districts can be expected.

That present conditions cannot continue indefinitely must be apparent to all, for to-day the cities that are spending money to reduce the incidence of tuberculosis are continually receiving new tuberculous recruits from districts that are doing nothing to protect themselves. As a striking example, one municipality adjoining Hamilton, that has a reputation as a healthy district for those affected with lung trouble to live in, has to bear far more than its fair share of expense to-day for the maintenance in our sanatorium of residents from that district, who have moved there from Hamilton or other municipalities.

War Experience.

But the greatest factor tending to bring about a betterment of conditions is found in the lessons learned from our war experiences, for the raising of an army of half a million men gave an opportunity to take stock on a large scale of the young manhood of our country. As a result we have learned that the incidence of tuberculosis is quite as great in proportion to population in men from country districts, and that provision for their care should be on a proportionate scale. Had this stock-taking been applied to the young women of our land similar conditions would probably have been found, while this leaves out of the question altogether the incidence of tuberculosis in the aged and the children.

But the greatest service that the war has done is probably the object lesson given in the handling of all diseases in the interests of the whole country. The Army Medical Corps provided a system to keep the men up to their best or to weed out the definitely diseased and place them under treatment. Now, while it is very clear that it pays a country to raise and spend money to keep its fighting men efficient in time of war, it has appeared to many that it would be equally to the interest of a country in time of peace to raise and spend money to keep its citizens and population efficient. The greatest asset of a nation is its citizens; and when practically one-third of our young manhood were found to be unfit for military service there is a very real waste of this, the greatest asset of the country. Following in the train of the war has come and is coming a social awakening; or, if you like, a social revolution, the basic idea of which is that if a democracy is to expand along sane lines it will be necessary for it to enact laws that will provide against this terrible waste in the efficiency, and even in the lives of so many of its citizens; for even yet almost one in every ten deaths is due to tuberculosis, and most of these are in the very prime of life.

Another great lesson learned from the war has to do with the care of the tuberculous, the lesson being this, that if treatment is worth while it should be done thoroughly. The amount of treatment a sanatorium can give a patient is determined by the amount of money given to the sanatorium to spend on that patient; but, in pre-war days, the institution with lowest cost per day was proud of the fact. With the coming of military patients with their many complications, the results of wounds, gas, frequent colds, excessive exposure, pneumonia, pleurisy with effusion, trench fever, dental infections, hysteria and other conditions, in addition to tuberculosis, the problem of diagnosis became more difficult, and also more important on account of its bearing upon the ex-soldier's disability and pension. As a result it became necessary to secure the aid of a dental department, an X-ray department, better laboratory facilities and, finally, a system of vocational therapy as an aid to regular treatment, to counteract the mental attitude of the ex-soldier who naturally chafed under the restraint of sanatorium life. Finding these more thorough methods so beneficial in the treatment of ex-soldiers, they have, one after another, been gradually applied to the civilian patients with even greater increase of efficiency in treatment.

So certain are we that this method pays, even though it makes a considerable increase to the cost per day per patient, that we are

now convinced that every new patient should go first to a department of the sanatorium, which might be called a reception hospital, where the case would be studied thoroughly with the aid of all practical X-ray and laboratory facilities, and where all other foci of disease would be discovered. By such a method it would be possible to treat from the outset all the conditions which are contributing to the ill health of the patient, and such a course would in some cases shorten the period of treatment by months and, indeed, would sometimes change an unfavourable to a favourable case. This method would cost more money, but it would also save much useless expenditure of time and money, and would save human lives. Furthermore, with such improved facilities for diagnosis, the sanatorium might well be called upon to serve as a clinical department for the commuuity in which it is located, in working out the diagnosis of doubtful chest cases in some such manner as the Mayo clinic serves this continent. For such a practical service rendered to the people the province could well afford to subsidize this department in every sanatorium by a liberal grant over and above the per capita grant for maintenance, for undoubtedly the people would demand such a service once they knew its possibilities.

The Necessity of Complete Diagnosis.

Nothing else in our experience has assisted to secure for us the confidence of our patients as has an accurate and complete diagnosis of their conditions, and, while older methods have been lacking in thoroughness, it has recently been a most gratifying experience on several occasions, after months of treatment with the patient doing poorly, to discover by means of the X-ray some complication such as a dental focal abscess, and then after proper treatment of this complication have the patient start on a course of gradual but steady improvement. Older methods of "laissez-faire," if they had not been the result of ignorance or insufficient funds would, in the light of our post-war experiences, have to be classed as nothing less than criminal.

The necessity for provision in every sanatorium doing thorough work of a laboratory, an X-ray and dental department makes it apparent that the usefulness of the small sanatorium, with no resident physician, or with not enough patients to support such an organization, is very limited. It therefore becomes apparent that local sanatoria in this province should serve not the average single county, but groups of counties with an aggregate population of at least 100,000

and, preferably, 200,000 people. By the adoption of such a plan each institution would be of at least a 200-bed capacity, and would be able to operate within reasonable bounds of economy.

Social Considerations.

While the above explains needs for improvement that the war has shown to be necessary within our sanatoria, if they are to serve the community to best advantage, still there is another side to the question. This is the social phase of the question involving, as it does, the laws and customs by which our society is governed, for so soon as the people, as a whole, put into actual daily practice the information that is to-day available, just so soon will tuberculosis be in the way to become a negligible factor.

Therefore as a social measure education will always have to be a very important factor, and for this reason the central organization, The Canadian Association for the Prevention of Tuberculosis, should have its budget greatly increased so that it could carry on a work that would bear some proportion to the number of lives affected. It should receive the active co-operation of the Federal Department of Health, and the latter, whose work will probably be chiefly advisory and educational, should have the full co-operation of the Provincial Departments of Health, whose work will remain to a great extent administrative.

The work of the Provincial Department of Health is carried on in the municipality by local medical health officers, and the most urgent need of the day is that these men should be full-time government officials devoting the whole of their energies to the development of a practical system of preventive medicine in their special district. With the medical officers should be associated district health nurses, who would be sent into the homes to investigate conditions and to teach the principles of preventive medicine.

School Inspection.

The local medical health officer should also be responsible for an efficient system of school inspection, with a sufficient staff of medical examiners and nurses; and he should be called upon to provide free clinics, where necessary, in smaller towns as well as in cities, where experts in diagnosis could be at the service of both the health officer and the local practising physician, the qualification for securing such service being not poverty alone but citizenship. With all this,

if we are aiming at the development of efficient citizenship, must go a course of instruction in the schools on matters of health, for without a doubt the foundation of an efficient citizen is not a highly developed mind but a healthy body. Such a course would link up principles and practice, and would give to the children the opportunity more or less completely denied to the majority of parents of to-day to keep abreast with the rapidly advancing science of medicine.

With such a system in operation there is no doubt that haphazard methods of diagnosis, prevailing so generally to-day with regard to tuberculosis and other chronic diseases, would very soon take their place in the popular conscience as nothing short of criminal neglect. This much needed improvement would come in quicker if, with the acceptance of sanatoria as diagnostic centres for chest conditions, it were made possible for medical students to spend a short period of internship in the sanatoria as part of their course. This is now being done in Manitoba, and we have been using one or two medical students during summer vacations for some years and with very gratifying results, for we find these medical students very much in need of such training, but also very eager and quick to learn.

The Diseased Adult and His Family.

With such developments along educational lines would go various changes in the regulations governing society, for if the people were to really provide the funds for doing this work thoroughly they would not permit these funds to be wasted by any false ideas of the freedom of the individual. No individual in a democracy can have the right to destroy another either by quick or slow methods, and this applies equally to the dairyman who must not be allowed to sell milk from tuberculous cows, and to the open case of adult tuberculosis who must be allowed neither to expectorate carelessly nor to associate with young children.

This latter is the most pathetic phase of the whole tuberculosis problem, and in the light of recent observation it would seem that many more cases of open but afebrile tuberculosis are at large in the community than was formerly thought possible, for it has been found among ex-soldiers that patient after patient has gone for months with positive sputum, but with temperature running an afebrile course. Sometimes the best course in such cases will prove to be to take the children out of the home, and for this the preventorium for purposes of protection and the children's department of

the sanatorium for active disease in childhood will more and more be called into use. Once tuberculous disease has developed in a child the difficulties of effecting a cure become progressively more difficult as time is allowed to elapse; but, on the other hand, a complete cure in childhood is a means of acquiring immunity which throughout the life of that individual will protect against future exposures to infection, and is therefore a real asset and is the strongest argument in favour of finding and treating every possible active case in childhood.

With these necessary changes will come broader-minded ideas with regard to the maintenance of patients in sanatoria, and it is my opinion that in the presence of a disease so much dependent on social conditions that society at large is more than equally responsible with the individual, the whole community should accept it as a duty to pay the cost where that cost includes only the necessities of treatment and not the luxuries. But whether or not we can agree to go to that length in assisting the less fortunate among us, we must all agree with Stephen Leacock that "the chief immediate direction of social effort should be towards an attempt to give to every human being in childhood adequate food, clothing, education, and an opportunity in life." We therefore must agree that there can be no excuse for refusing to extend the proposed pensions to widows with children, to the wives of bread winners who have broken down with tuberculosis, so that the mother can keep her family from want while the father is still living. Every rule that applies to the widowed mother applies here; and often the need is greater, for the children or the mother have probably already been infected, due to contact with the father, and lack of this measure of assistance may be the extra factor necessary to start them on the downhill road of the tuberculous.

Mental Attitude of the Parent.

But with any plan of generous state assistance, the individual assisted must be made to feel not that he is of no more service to his family or to the state; but that his obligation to serve has been increased many fold. If all is given as an absolute right of the individual, best results cannot be secured, as has been found to the undoing of not a few ex-soldiers. Where much is given much should be expected from the individual in the matter of protecting the community. For this reason laws should be so framed that the man who fails to comply with the requirements for the public safety will find that such action reacts to his own great disadvantage.

It is such a spirit of citizenship that Canada needs to-day to make it the nation we are all holding as our ideal. And so, while in Britain the spirit of the times has led to the nationalization of the medical profession with only moderately satisfactory results thus far, it seems to me that we could work to the same purpose, but with far better results, by means of a proper development of the medical health department—federal, provincial and municipal—and by a proper organization of each community in the interests of preventive medicine. Undoubtedly the process of social evolution set in motion by the war will lead to one or the other, and that very soon, for in the words of Leacock, "The safety of the future lies in a progressive movement of social control, alleviating the misery which it cannot obliterate, and based upon the broad general principle of equality of opportunity."

The time is ripe for a great advance along all lines of social progress, and these advances can only come by the state assuming more responsibility for the individual. In the matter of tuberculosis this must come as the result of a campaign of education which will teach the people the great principles of preventive medicine, and will make clear to them that methods of prevention through the establishment of better methods for the diagnosis of the disease in its early stages, and of well-equipped sanatoria that will give to every patient the best chance for recovery, is better than the wasteful present method where so much is left to individual initiative, with the result in Ontario that outside of eight or nine centres the country is still almost unorganized for practical preventive work. The result of proper measures of prevention must be to the individual a new appreciation of the value of citizenship and to the state, not increased expense, but a new source of national wealth, for the measurement of citizenship will be based on the opportunity that it gives its citizens to serve.

To conclude, I would say, therefore, that what Canada needs to-day is a leadership that will create for us a public sentiment strong enough to secure for civilians the great advances, both in methods and in institutions, that have been developed by the federal department for the benefit of soldiers. These advances were made at great cost to meet the difficult conditions; much of it was pioneer work, and that which has been proved by experience to be good, should not be lost, but should be turned to the benefit of all Canada. What is wanted most is immediate action, for the work with sol-

diers is nearing completion. If the federal authorities are allowed to end their work with no provision for their institutions, or their methods to be extended to civilians, it will take twenty years to get back to where we are to-day. This is the psychological time for a great advance in this branch of preventive medicine, and we ask your support to make sure that it will come quickly, before the opportunity is lost.

Discussion.

Dr. Peter H. Bryce, of Ottawa, in the discussion said that the paper of Dr. Holbrook had given him the greatest pleasure, since he had supplied so many facts upon which to base his conclusions, that Dr. Bryce, for himself, could only say that he must agree with practically all Dr. Hobrook's conclusions, and could say further that the work of Dr. Holbrook is probably more advanced and constructive than any he knew of, whether in the United States or Canada.

He was glad that he dealt with the problem of the disease as it appeared in children, and made our duty with regard to preventing child infection perfectly clear. Dr. Bryce said that for years he had considered the statement axiomatic, that the social status of any community can be most accurately measured by its freedom from tuberculosis, and that though some were taking a low mortality in children as the test of good sanitary conditions, it will be found that everywhere these two standards run on parallel lines.

The enormous value of Dr. Holbrook's paper lay especially in the care of early cases of the disease. He truly stated that every day gained in the early treatment of the disease is like a month gained in assurance as to recovery.

He, Dr. Bryce, had been so much struck several years ago with the splendid results of the operations at the Hamilton Sanitorium that he made a study of them with the results in Ottawa's institutions, since the population of the two cities was about the same and the date about the same when the sanatoria and hospitals were established in each place.

In the year 1916 Dr. Bryce had made the first comparative study, and found out that while the Ottawa institutions had 211 patients, those in Hamilton had about 146. Further, that while the average hospital days in Ottawa were 95, those in Hamilton were about 142. As these differences had some definite explanation, it was found that while in Ottawa there had been 51 deaths, in Hamilton there had been only 12. While this might account for the less hospital days

it did not explain why so many had died in Ottawa; but further examination of figures pointed to the significant fact that while in Ottawa there had been only 18 patients under 18 years of age, in Hamilton there had been 87. Hence, Dr. Holbrook was not only supported by statistics to show that most of tubercular cases are infected in early childhood, but that in the degree that they receive early treatment will the death-rate from the disease decrease. That this had taken place in Hamilton may be shown in comparative deathrate of the two cities, for while each has about doubled since 1904, the deaths in Hamilton have shown no true increase, or a reduction of 50 per cent., while the high rate of Ottawa in 1904, while lessened, still stood in 1917 at about double that of Hamilton.

What Dr. Holbrook had said about the need for an educational propaganda was abundantly evident. To-day there were actually in Ontario only nine county or district sanatoria, whereas each county or group of counties should be compelled to have one fully equipped with all that the recent work with tubercular soldiers had shown to be necessary.

This brings out very clearly what Dr. Holbrook says with regard to the getting of cases from the schools and elsewhere, in their initial stage at the clinics, and then to the sanatorium.

Dr. Bryce stated that as the officer responsible for drawing up and getting passed by Parliament the Sanatorium Act of 1900, he was particularly interested in the development of those institutions, and wholly agreed with what Dr. Holbrook had said, that their progress must depend upon the appointment of all-time county officers of health to replace the many local M.H.O.'s in our 700 municipalities.

Dr. Bryce pointed out that he had left this proposed reform or change to the Provincial Board of Health of Ontario in 1904, as his legacy, when he had gone to the federal service.

The Conference could not do better in the interests of all social betterment than to urge everywhere a propaganda along the broad lines set out in Dr. Holbrook's paper.

The Provincial Board of Health of Ontario

Cases and Deaths of Communicable Diseases reported by Local Boards of Health for the Month of August, 1920

COMPARATIVE TABLE.

Diseases.	Aug. *Cases.*	Aug. *Deaths.*	July *Cases.*	July *Deaths.*	Aug. *Cases.*	Aug. *Deaths.*
Small-pox	171	0	142	0	30	0
Scarlet Fever	173	4	169	4	120	2
Diphtheria	273	36	302	46	190	28
Measles	626	10	1,419	15	64	0
Whooping Cough	178	21	106	5	112	14
Typhoid	67	10	35	8	69	16
Tuberculosis	192	129	161	82	196	109
Infantile Paralysis	5	1	2	0	3	0
Cerebro - Spinal Meningitis	6	6	3	3	8	8
Influenza	6	6	6	6	.....	.....
Acute Influenzal Pneumonia	1	1	2	2	.....	58
Acute Primary Pneumonia	.....	96	.....	116	.....	.....
Relapsing Fever and Dysentery	18	3	.....	.....	.....	.....
	1,716	323	2,347	378	792	253

Venereal Deseases reported by the Local Officers of Health

	Aug. 1920.	July. 1920.	Aug. 1919
Syphilis	208	131	83
Gonorrhoea	217	135	139
Chancroid	9	0	7
	434	266	229

Small-Pox Cases reported for the Month of August, 1920

County.	*Municipality.*	*Cases.*
Carleton	Ottawa	9
Essex	Essex Border	2
	Cosfield North	1
Frontenac	Hinchbrooke	1
Halton	Georgetown	3
Hastings	Belleville	6
	Deseronto	1
	Trenton	1
	Tyendinaga	1
	Thurlow (Point Ann)	75
Lambton	Brooke Tp.	1
Leeds and Grenville	Cardinal	2
Lennox and Addington	Fredericksburg N.	1
Lincoln	Grimsby N.	1
Middlesex	London	2
Muskoka	Bracebridge	2
	Macaulay	1
Nipissing	North Bay	4
Northumberland & Durham	Hastings	3
	Percy	3
Ontario	E. Whitby	1
Oxford	S. Norwich	3
Perth	Wallace	3
Peterboro	Peterboro	6
Prescott and Russell	Cambridge	5
Prince Edward	Ameliasburg Tp.	1
Simcoe	Orillia Town	3
Sudbury	Sudbury	4
	Nairn	4
Thunder Bay	Port Arthur	1
	Fort William	1
	Neebing	3
Waterloo	Kitchener	2
	New Hamburg	3
Wellington	Arthur Tp.	1
Wentworth	Hamilton	2
York	Toronto	7
	Georgina	1

The reports of communicable diseases for the month of August show an increase in smallpox over the previous month. The increase is mostly due to an outbreak in Thurlow Township (Point Ann) Hastings County, where some 75 cases have been reported. Diphtheria shows a decrease of 29 cases and 10 deaths compared with July returns. The case mortality being 13.1 as against 15.2 in July and 14.0 in August last year. The epidemic of measles the Province has had since the beginning of the year has about disappeared. For the eight months there were 12,296 cases and 179 deaths reported.

During the month of August there has been a decided improvement in the reporting of venereal diseases, and it is to be hoped that this improvement will continue as it is felt that even yet the cases are not all being reported.

"Health Gleanings"

Being interesting items of practical work in the field of the newer health movement for the information of Canadian citizens and incidentally for any statesmen who may dwell in this vast Dominion.

"MATERNITY AND WELFARE WORK IN BIRMINGHAM, ENGLAND."

The efforts of the thirteen municipal centres and the eight voluntary organizations seem to prove conclusively the importance and the beneficial effects of the work.

During 1919, 19,335 babies were born and 87% of them were visited in their homes, and the infantile death rate was 84 per 1,000 births, which is a most encouraging report when it is remembered it was as high as 157 per 1,000 in 1906, since which year is has annually shown a decrease with the exception of the year 1911 when it was 150 per 1,000 births.

The corporation is alive to the fact that to secure results costs money, but it pays. Amongst other grants, $7,000 a year is paid to the Women's Hospital to provide 14 beds for puerperal fever cases and $10,000 to the Maternity Hospital for 20 beds for different cases of pregnancy—and $2,000 to the Monument Road Day Nursery for ten children whose mothers are undergoing either hospital or sanitarium treatment.

The report of the Corporation's Health Committee makes the following interesting recommendations:

It advocates arrangements for the appointment of three whole-time medical officers for the treatment of the ailments of mothers when no medical attendant is employed at the time of labour, at a cost of $15,000 per annum.

It also advocates the establishment of a certain number of Midwifery Homes where mothers can go for confinement, where approved midwives can reside, the number suggested being ten, each to have accommodation for a midwife, two pupil midwives and six or eight cases, this being considered a more suitable place than the courtyard (slum) dwellings of the city. The total capital expenditure for the ten homes is estimated at $65,000 and the annual cost at $36,000.

Birmingham realizes that it pays to pay money for the care of both babies and mothers, and it is an example of a city rising to the great responsibility.

State Medical Service.

During the discussion of this important subject recently at Cambridge, Eng., the Secretary of the Labour Party Health Committee voiced the views of Labour on the question. He said he did not want the workers to be spoon fed; the workers must be educated to precautionary and hygienic measures.

He was anxious that the State should not only come to the aid of the existing hospitals, but should provide sufficient hospital accommodation for all need in all parts of the country. The speaker felt there was only one remedy and that was to have the whole nation insured and the whole nation bearing the cost.

At the conclusion of the discussion Sir Wilmot Herringham said he did not think there was any need to be anxious about the vastness of the sum required to ensure an efficient medical service for the community. It was quite evident that the Labour Party (in England) was willing to provide it, and that generally meant that it would come out of the other people's pockets, so there was nothing more to be said.

The discussion of this subject brought out most prominently the fact that speaking generally at the present time the hardships as to medical treatment fall on those of the middle class, and unfortunately this is the class which is always pinched to-day as between capital and labour, and since the war they are suffering most, and in this country perhaps contribute most for hospital upkeep.

Housing Pointers for Canadian Cities.

The Askern Garden Village near Doncaster is a modern utopia. The houses recently erected contain a good living room, scullery and larder, coal house and bath room, three bed rooms, and are electric lighted throughout, and, *note,* a good garden back and front. The rent is $132.00 per annum, and the cost per house is $2,750.00. The work, too, is private enterprise. Could such be found in Canada?

At Folkestone the houses are being built of concrete slabs made from destructor clinker and are manufactured by the Corporation Works together with the tiles, lentels and sills, and it is expected the scheme will prove exceedingly economical. Rather an object lesson

or two in these few lines for august controllers and political alderment—but I forgot, but few of our cities know how to operate a destructor and make money for the ratepayer. We still dump our town refuse anywhere and miss the fact that it is of commercial value.

The experiences of Hayes (Middlesex) and Luton are similar in respect to concrete houses—both disappointing—from reports it would seem as if the chief defect lay in faulty construction.

On the other hand the Manchester Housing Committee is constructing 300 concrete houses on the Catterick Hall Estate and 500 houses on the Newton Heath Estate. Here the outer wall is one and a quarter inches thick, a cavity of two and three-quarter inches and an inner wall two inches thick. A proposal to increase the outer wall to two inches in thickness was rejected.

The Wopsley housing scheme, Luton U. D. C. Companies sixty houses: thirty-two of which have been erected. The buildings are of brick with tiled roof and cost $4,000.00 each for the parlour type and $3,600.00 each for the non-parlour type. Each is fitted with a bath and is well provided with cupboards, shelves and accessories for the housewife.

The best gravel for concrete is said by an engineer who has studied the subject to be composed chiefly of fine pebbles approaching pea gravel in size. The material should be retained in a quarter inch screen and pass through to a one and a half inch screen.

The pebbles should be principally hard limestone, sand or granite: pebbles of shale or fossil rock should not be used and pebbles larger than two inches in diameter should be discarded.

To the asthetic and incidentally to those who are not so inclined, it will be of interest to know that the best results in colouring of concrete are secured by the use of metallic solutions as the beauty of the colour is increased by oxidation such as takes place on real metallic surfaces. It has been found that surfaces thus treated will take a polish like marble, granite and metal. Now let us have the house ornate!

Venereal Disease and Industrial Efficiency.

An influential manufacturing concern built a city in a wilderness for the housing of thousands of men and women employees.

When efficiency dropped below expectations, the officials sent experts to conduct a survey and find the cause.

This investigation revealed the following facts:

(a) That one employee in every ten had a venereal disease.

(b) That 68% of the non-effectives were there because of venereal disease.

(c) That every person who had a venereal disease lost three times as many hours from work as the person not affected.

(d) That it cost every person so afflicted $75.00 per year for treatment—a total of $5,000.00 for treatment—with a loss of time greatly exceeding this amount.

This survey convinced the officials that it would repay them to take steps for remedying the situation and clinics were established with the result that in a comparatively short time the cost of operating the clinics was entirely offset by increased production.

In this connection it should be pointed out that Industrial Aid in controlling venereal diseases can be made most effective through financial and moral assistance to local public facilities rather than through plant clinics. Much may be accomplished, however, by placarding and the distribution of educational material through the plant.

News Items

A Dominion Conference on Child Welfare is to be held in Ottawa the 19th and 20th October.

The outstanding feature in venereal disease work in the United States is the coming All-American Conference on Venereal Disease to be held in Washington from December 6th to 11th, 1920. This conference is being called under the auspices of the Government and voluntary Venereal Disease agencies of the United States and should be of the greatest possible interest to all venereal disease workers in Canada. The following subjects will be under discussion: Problems relating to: Medical Investigations; Education; Law Enforcement; Social Influences; Administrative Control Methods.

Arrangements were made by the Academy of Medicine, Toronto, to hear a personal presentation or written communication by Dr. J. T. Glover in reference to his cancer treatment. The Council of the Academy was named as the Committee of Inquiry to conduct an investigation into this treatment. It was announced that a report of their findings will be published by the end of the month.

The British National Council for Combating Venereal Diseases are sending three Commissions to visit various parts of the overseas Dominions with a view to encouraging provision of facilities for free diagnosis and treatment of Venereal Diseases. One Commission is visiting the West Indies, one the Mediterranean ports, and another the Eastern ports. The Commission visiting the Far East, which includes Mrs. C. Neville Rolfe, O.B.E. (Mrs. A. C. Gotto) General Secretary of the National Council, will cross Canada early in November, and will be in Toronto about November 7th.

The second meeting of the Advisory and Consultative Committee of the Canadian Red Cross Society will be held in Ottawa on October 21st.

The Sixth Congress of French-Speaking Physicians of North America was held at Quebec on September 9th, 10th and 11th under the presidency of Dr. A. Rosseau. The Congress was most successful. During the Congress Premier Taschereau announced the detals of a progressive campaign to be initiated by his Government for the control of venereal diseases, tuberculosis and infant mortality.

Editorials

Ottawa Garden Suburb

LINDENLEA, the garden suburb of Ottawa, the development of which is being carried out under the administration of the Ottawa Housing Commission, has already established a standard for housing development. The sort of street system—if lines at right angles to each other can be called system—by which most of our housing developments have been straight-jacketed,, cannot stand the competition of such projects as Lindenlea, which is but fifteen minutes' ride from the heart of the city.

Such developments are bound to have a profound effect for good throughout the country. They represent an escape from the grid-iron development and give a freedom to domestic life which is spiritual as well as physical. Workers who have lived in such towns will not be content with less advantageous surroundings. Building operations must equal these developments or go out of business sooner or later.

If it is worth while, as a civic policy, to encourage escape from congestion to better and healthier living conditions, it is worth while to study out and provide means whereby recreation and neighbourship can be stimulated.

In the ten-year period prior to 1911 the population of the county of London, England, had fallen off to the extent of 0.3 per cent., whereas in the outer fringes of the metropolitan areas it had increased 33.5 per cent. in the same period. This rapidity of decentralization of city population is becoming nearly as great in this country.

There is, however, an imperative need for social and recreative facilities in developments of this kind. This movement has come into prominence since the war, and must be taken into account in preparing housing and town planning schemes.

Men and women returning home from service in the army, used to the recreative huts in camp, have awakened their fellow-citizens to the need for social centres, where they can meet thier friends and enjoy mutual intercourse during the evenings or find means of self-expression in music, dancing or art.

Suggestions are now under consideration at Lindenlea to promote such a social community project, with the hope of realization when the Community Hall is built.

The progress made with this scheme will be appreciated by recalling that it was not until the autumn of 1919 that building operations were commenced, whereas now over 60 houses are completed or nearly so, and further contracts have been placed for the erection of another fifty.

The roads are now taking shape, emphasizing the physical expression of the development; also, by utilizing the surplus rock and boulders incidental to the excavation of the houses, the wading pool is being formed. Even the casual visitor must be impressed by the rewarded efforts of the home builders' random rubble paths, grass lawns and beautiful flowers, which are only part of the evidence of the effect of community life under favourable conditions.

It is the duty of all to co-operate in a social and democratic way to create attractive local communities on the outskirts of cities wherever practicable, thereby working in accordance with the broader meaning of housing reform, defined as the furnishing of healthful accommodation purchasable at reasonable prices, adequately provided with facilities for privacy and comfort, easily accessible to centres of employment, culture and amusement, and accessible from the centre of distribution of the food supply.—*B. Evan Parry, in "Town Planning and Conservation of Life."*

Community Public Health

THIS is an age of organization and specialization, and everywhere there is a general tendency to line up like activities in such a manner that waste of time, effort and money may be eliminated. That is one of the reasons why the health centre idea has come to the front. Besides people generally are beginning to realize that the hitherto more or less unnoticed casualties of peace are more serious even if less spectacular than those of war. During the five heartrending years of world conflict because we had to we took stock. We found that to our astonishment our supply of normal healthy specimens of mankind was lower than ever we had imagined, that disease often disguised and unsuspected stalks in the land, that disabilities are far too common, that death comes too

quickly and too often. The answer is community public health and the health centre is one of its manifestations.

The object of a health centre is to consolidate, administrate and increase the efficiency of various public health, welfare and charitable organizations in the community, and in addition to spread the doctrines of public health in all directions. The very name implies an administration building whence may radiate various activities such as medical and dental services for schools. Here, too, are various clinics serving the community, the anti-natal clinic, the tuberculosis diagnostic clinic, the psychopathic clinic, the child welfare clinic, a laboratory, possibly a keep-well clinic where adults who are supposedly well may report for periodic inspection.

The whole idea is bristling with opportunities. One would imagine that the health centre building would be an admirable headquarters for the County Medical Society of the community, which the centre serves, that there might be an auditorium for public health lectures and moving pictures, meetings of the local women's institute and of the Red Cross Society and various voluntary health associations specializing in different phases of public health. The subject is important and it is hoped that the PUBLIC HEALTH JOURNAL may be able to secure a comprehensive article dealing with its numerous phases for publication in an early issue.

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An Analysis of Diphtheria Deaths in Ontario

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A STATISTICAL study of deaths due to diphtheria made by Carey for the Massachusetts State Department of Health, led to an inquiry being instituted by the writer into the same subject in Ontario. As a matter of interest, it may be noted that diphtheria deaths were registered for the first time in England in 1859, and in the Province of Ontario in 1870. Between the years 1870 and 1880 death registrations were incomplete, and for some unknown reason, no deaths from this disease were registered during the year 1875, or, if they were, no record of them is obtainable. This analysis, therefore, is concerned with diphtheria death registrations between the years 1880 and 1918.

These registrations have been analyzed and tabulated to illustrate the total deaths each year due to diphtheria, the percentage of diphtheria deaths of the total deaths from all causes and the ratio of diphtheria deaths per 100,000 of population (Figures 1, 2, 3). Each tabulation includes all years between 1880 and 1918.

There is a striking similarity in the form of the curves plotted to illustrate these points. In all of them the fall in the death rate between 1906 and 1918 is manifest. In each the fact that in 1918 there was recorded the lowest diphtheria mortality yet observed in the Province of Ontario, is clearly brought out. Despite a steady increase in the population from 1,884,000 in 1880, to 2,800,000 in 1918 the total number of diphtheria deaths fell from 1,251 in the former year (1880) to 335 in the latter year (1918).

In order that there may be no misconception in regard to the possible significance of diminished case incidence, a graph has been prepared showing the number of reported cases of diphtheria for the years 1901 and 1919 inclusive (Figure 4.) From this it will be seen that there is a steadily increasing case-incidence even though the case fatality rate has been diminishing. This is in harmony with the facts observed in many other parts of the world. The death rates in pre-antitoxin and antitoxin periods in various countries in the world is well illustrated by the chart prepared by the Statistician's Department of the Prudential Insurance Company of America (Figure 5). Similarly the contrast between results obtained in pre-antitoxin and antitoxin periods may be observed by reference to charts illustrating the Philadelphia and Newark, N.J., experiences (Figures 6-7).

Another interesting observation relates to the difference in the death rate amongst cases treated in hospital and those who were not hospitalized. In Toronto, for example, the difference in death rate has been as follows:

Year.	Percentage of Deaths of Hospital Cases.	Death of Patients not in Hospital (Percentage of cases reported.)
1912	8.0	12.63
1913	6.15	10.10
1914	7.82	10.29
1915	6.51	12.91
1916	7.00	13.14
1917	4.18	10.90
1918	6.40	19.62

It will thus be seen that the death-rate amongst cases of diphtheria treated in hospital in Toronto is very much lower, as a rule, than amongst those not admitted to hospital. Amongst these latter, however, some of the fatal cases may have received no medical or nursing care. To offset this it must be noted, that a considerable number of hospital cases were admitted in a moribund condition and died within twenty-four hours after admission. This point, as well as the others, are brought out in the following table:

DEATHS FROM DIPHTHERIA, CITY OF TORONTO, 1912-1919.

Year.	Cases Reported.	Treated in Hospital.	Not admitted to Hospital.	Hospital. Deaths.	Deaths at Home.
1912	1,383	663	720	53	91
1913	895	569	326	35	33
				*(18)	
1914	873	601	272	47	28
				*(11)	
1915	746	537	209	35	27
				*(14)	
1916	1,249	884	365	62	48
				*(30)	
1917	1,445	1,124	321	47	35
				*(30)	
1918	1,163	1,015	158	65	31
				*(25)	
1919	2,132	1,327	805	96	72
				*(24)	

It has long been recognized that delay in the administration of antitoxin is one of the most important reasons why we continue to have deaths due to diphtheria; which deaths it may be remarked are really preventable. The difference in case fatality according to the day of the disease on which antitoxin is given is well shown in the following tables prepared by Kolmer (4), (Figure 9). Further reference will be made to this point in a consideration of our own investigations.

To ascertain what were the essential factors in the Ontario experience a circular letter was prepared and sent to physicians who had been in attendance on patients who died of diphtheria. With this letter was sent a questionaire; which the physicians were requested to fill in and return. The letter and questionaire were as follows:

"An endeavour is being made to ascertain why the death rate of diphtheria remains at its present high level in spite of adequate laboratory facilities and most generous provision for free distribution of diphtheria antitoxin.

*Indicates number of hospital cases dying within twenty-four hours after admission; having been admitted, very often, in a moribund condition.

A similar observation has been made by Kolmer (3) in a study of diphtheria deaths in Philadelphia. (Figure 8.)

"To understand why this situation exists, it will be necessary to obtain the cordial support and co-operation of the medical practitioners in Ontario, in the statistical study which is being undertaken.

"Will you, therefore, supply, as completely as possible the information which is requested on the enclosed sheet, regarding this fatal case of diphtheria recently reported by you.

"Your assistance in this will be greatly appreciated and the results of an analysis of the return may be very valuable in devising some plan whereby diphtheria deaths which are preventable may really be prevented."

DIPHTHERIA.

Name of deceased .....

Date of death .....

What was the date of the onset?.....

.....

(Accurate information is particularly requested).

When was the patient first seen by you? .....

NOTE.—If hospital case see "E" below.

January, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29						

March, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

ANTITOXIN.

(*a*) When was it first given? .....

(*b*) Quantity given, 1st dose.....units on.....day case was seen
2nd dose.....units
3rd dose.....units
or total amount .....

(*c*) Was there any delay in obtaining serum? .....

(*d*) In your opinion was delay in calling in a physician a factor in the fatal result in this case? .....

(*e*) Was this case treated in a hospital? If so, please state date of admission .....

REMARKS:..... .....

In all just over 100 replies were received before the preparation of this article was undertaken. Four representative replies are given herewith:

DIPTHERIA.

Dr. O'C.

Name of deceased, A. P.

Date of death, July 14th, 1920.

What was the date of onset?.....

(Accurate information particularly requested.)

When was patient first seen by you? July 14th, 1920.

July, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOTE.—If hospital case see "E" below.

September, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

ANTITOXIN.

(*a*) When was it first given? .....

(*b*) Quantity given, 1st dose.....units on.....day case was seen
2nd dose.....units on
2nd dose.....units on
or total amount .....

(*c*) Was there any delay in obtaining serum? .....
Was diagnosis confirmed by a swab? .....

(*d*) In your opinion was delay in calling in a physician a factor in the fatal result in the case? .....

(*e*) Was this case treated in a hospital? If so, please state date of admission .....

REMARKS.—*"I did not attend this case during recent sickness with diphtheria—never saw the case until about one hour before death. He had had the disease a month before, with post diphtheritic paralysis, and when I saw him he was dying and I simply told his people so and left. They mentioned a couple of doctors who had seen him, but I do not know who attended him during the attack."*

DIPHTHERIA.

Dr. C.
Name of deceased, G. V.
Date of death, June 26th, 1920.
What was the date of the onset? About June 1st.
(Accurate information is particularly requested.)
When was the patient first seen by you? June 24.
NOTE.—If hospital case see "E" below.

June, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

ANTITOXIN.

(*a*) When was it first given? Not given.
(*b*) Quantity given, 1st dose.....units on.....day case was seen
2nd dose.....units on
3rd dose.....units on
or total amount .....
(*c*) Was there any delay in obtaining serum? No.
Was diagnosis confirmed by a swab?? No. Swab negative.
(*d*) In your opinion was delay in calling in a physician a factor in the fatal result in this case? Yes.
(*e*) Was this case treated in a hospital? If so state date of admission. No.

REMARKS.—*"The patient had an attack of sore throat with white patches, foul breath, about June* 1. *No doctor called. I saw her June* 24*th, when she was moribund with diphtheric paralysis and myocarditis, vomited continually, palate paralyzed and unable to move her legs; pulse* 150. *I was afraid to give antitoxin with her condition so critical. Swabs were negative."*

DIPHTHERIA.

Dr. L. McL.
Name of deceased. H.
Date of death, August 1st, 1920.
What was the date of the onset?.....
.....
(Accurate information is particularly requested).

July, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

When was patient first seen by you? .....

NOTE.—If hospital case see "E" below.

September, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

ANTITOXIN.

(*a*) When was it first given? .....

(*b*) Quantity given, 1st dose.....units on.....day case was seen.
2nd dose.....units
3rd dose.....units
or total amount .....

(*c*) Was there any delay in obtaining serum? No.
Was diagnosis confirmed by a swab? .....

(*d*) In your opinion was delay in calling in a physician a factor in the fatal result in this case? Yes.

(*e*) Was this case treated in a hospital? If so, please state date of admission. No.

REMARKS.—*"I saw this case half an hour before death. The child had been sick all week without medical attendance, the parents thinking it a case of tonsilitis. The patient was comatose when I saw him first."*

DIPHTHERIA.

Dr.: G. W. W.

Name of deceased, T. E. B.

Date of death, August 12th, 1920.

What was the date of the onset? .....

.....

(Accurate information is particularly requested).

When was the patient first seen by you? .....

NOTE.—If hospital case see "E" below.

July, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September, 1920.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

ANTITOXIN.

(*a*) When was it first given? .....

(*b*) Quantity given, 1st dose.....units on.....day case was seen.
2nd dose.....units
3rd dose.....units
or total amount .....

(*c*) Was there any delay in obtaining serum? .....
Was diagnosis confirmed by a swab? .....

(*d*) In your opinion was the delay in calling in a physician a factor in the fatal result in this case? .....

(*e*) Was this case treated in a hospital? If so, please state date of admission .....

REMARKS.—*"This boy was away from home at his grandfather's when he took sick, which was on or about July 30th. A doctor was called to see him Sunday, August 1st, and again Monday and Tuesday, but apparently did not recognize the trouble. The father who had been sent for brought the boy home on Wednesday, August 4th. I saw him in about two hours (2 p.m.) made diagnosis of diphtheria as his whole pharynx and nasal passages were covered by membrane by this time. Temp. 101 etc.... I gave immediately 20,000 units antitoxin, 15,000 again next day, and 15,000 again following day. By Tuesday, August 10th, throat and nose clear from membrane and temperature normal, but patient very pale and listless. Died suddenly Thursday morning from heart failure. This boy died because his trouble had not been recognized and antitoxin used earlier."*

In all just over 100 replies were received before the preparation of this article was undertaken.

The more salient features brought out by an analysis of the replies has been prepared in the following series of tables:

TABLE I.

AGE FACTOR—(101) CASES.

1	2	3	4	5	6 to 9	10 to 15	16 to 25	over 25	No. under School Age.	No. of School Age.
4	9	20	15	12	22	13	4	2	63	26

Under School Age, 63.
School age, 26.
Over School Age, 12.

TABLE II.—CLINICAL TYPES.

CASES.

Laryg.	Phary.	Nasal.	Mixed.	Not Stated.
11	3	3	19	65

TABLE III.—COMPLICATIONS.

AND OTHER FACTORS.

Sudden Deaths.	Lack of Nursing Care.	Myocardial Failure.	Paralysis Noted.
12	8	26	5

TABLE IV.

DELAY IN CALLING PHYSICIAN.

No. of days ill before Dr. called.								
1	2	3	4	5	6	over 6	Unrecognized Cases.	Moribund when Called.
2	13	14	17	18	8	12	13	6

No. ill two days or under—15. No. ill over two days—85.

TABLE V.

ANTITOXIN DOSAGE

1M	3M	5M	5M to 10M	10M to 15M	15M to 20M	20 to 25	over 25M	Intra-venous	Intra-muscul	Not stated	Given in Divided Doses	No. of Doses given			
												26	37	18	4
1	2	6	16	10	22	6	9	7	1	87	63	1	2	3	4 ove

Average Dose - 26M units
Smallest ,, - 1M ,,
Largest ,, - 15M ,,

TABLE VI.

NEG. SWABS—CLINICALLY POSITIVE CASES.

Lab: Diagnosis Neg. in Clinically Positive Cases.
6

In some instances incomplete information was received so that the total number of cases is not the same in each table.

A summary of the analysis of the age, of the cases shows that approximately 63% were children of pre-school age. This emphasizes the fact that diphtheria mortality will not necessarily be favourably influenced by the extension of medical and nursing service in schools. Table IV. serves again to refer to a point already raised, the importance of early treatment. In 85% of these fatal cases, the physician was not called until the patient had been ill for more than two days: and in over one-half of the cases more than four days elapsed before treatment was begun.

In Table VI. another very important point is established. In six cases, which at first were considered clinically doubtful, a negative laboratory report on the throat swab was received, but the case ended fatally, and diphtheria was given as the cause of death. The desirability of administering antitoxin, at once, in clinically doubtful cases of diphtheria where only one throat swab is taken, is clearly evident.

In this connection it should be remembered that the reason why all of these throat swabs from clinically positive cases were negative may be due to the fact that such swabs are frequently received from distant points, and 48 hours may elapse between the time when the swab is taken and the time when it reaches the laboratory. A physician who cannot have throat swabs cultured within a few hours after they are taken should, in all doubtful cases, administer antitoxin at once, and not await the result of the laboratory examination.

The average dose of antitoxin administered in these cases was 26,000 units. This is quite adequate if administered early; but if the patient is seen late in the disease, and the case is clinically severe more antitoxin may be necessary. In more than 60% of these cases 20,000 units or less was administered, altogether. Furthermore, in 63 cases, the antitoxin was given in divided doses instead of in one adequate single dose, when the patient was first seen. It is highly desirable to inject the entire amount of antitoxin which is to be given in one dose, and this should be administered at once and not in divided doses, twenty-four, thirty-six, or forty-eight hours after the patient is first seen—then, again, antitoxin should very often be given intravenously, if treatment has been delayed. In this series it was given intravenously in only seven cases apparently in a total of thirty-nine.

Certain very definite indications emerge from a consideration of the facts elicited by this investigation.

SUMMARY.

(1) Early Treatment.—The most important single factor responsible for the continuance of diphtheria deaths is the neglect of early treatment. Failure in this respect is usually due to delay in calling a physician in cases of sore throat in little children. Every sore throat is potentially dangerous. Only the physician can decide which cases are serious and which unimportant... Education of the public in this matter is a matter of vital moment.

(2) Physicians will be well advised, in the opinion of the writer, in administering antitoxin in single rather than in divided doses. Attention is also directed to the desirability of administering at least 5,000 units of antitoxin intravenously in late and severely toxic cases, as soon as they are seen by the physician. In such cases the remainder of the dose which the physician has decided to give, may be injected subcutaneously or intramuscularly. Absorption is ten times as rapid after intravenous, and four times as rapid after intramuscular as after subcutaneous injection.

(3) In regard to the dosage, opinions differ. There are those who hold that a dosage of from 10,000 to 50,000 units is adequate in all cases. Whyte of Toronto, Place of Boston, and Woody of Philadelphia, believe in larges doses, even up to 150,000 units. In this connection the statement of Park (4) that "the greater the quantity of antitoxin in the blood the more rapid will an appreciable amount pass to the tissues," should be had in mind. This may decide the issue of life or death in cases of diphtheria where treatment has not been undertaken early.

The writer is greatly indebted to Mr. S. J. Manchester, of the Registrar-General's Branch of the Department of the Provincial Secretary of Ontario, who prepared the charts illustrating the Ontario experiences.

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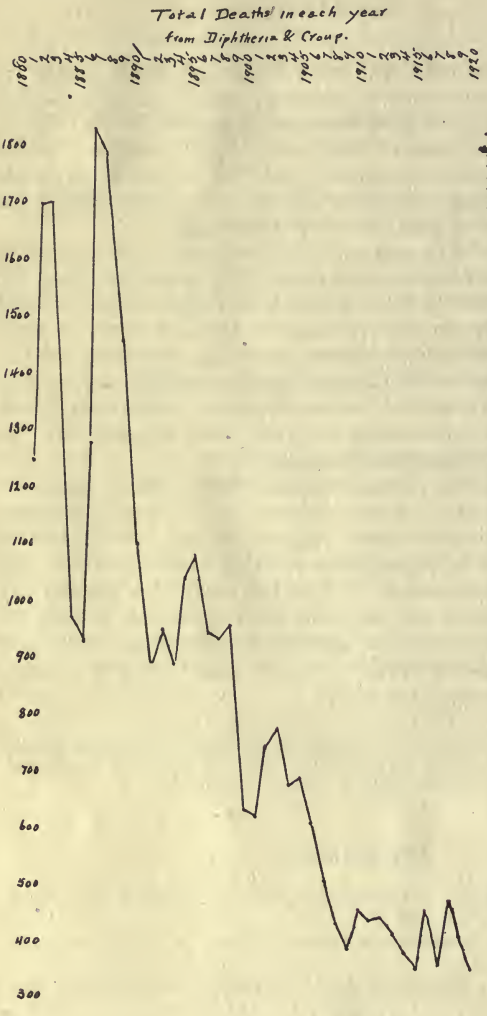
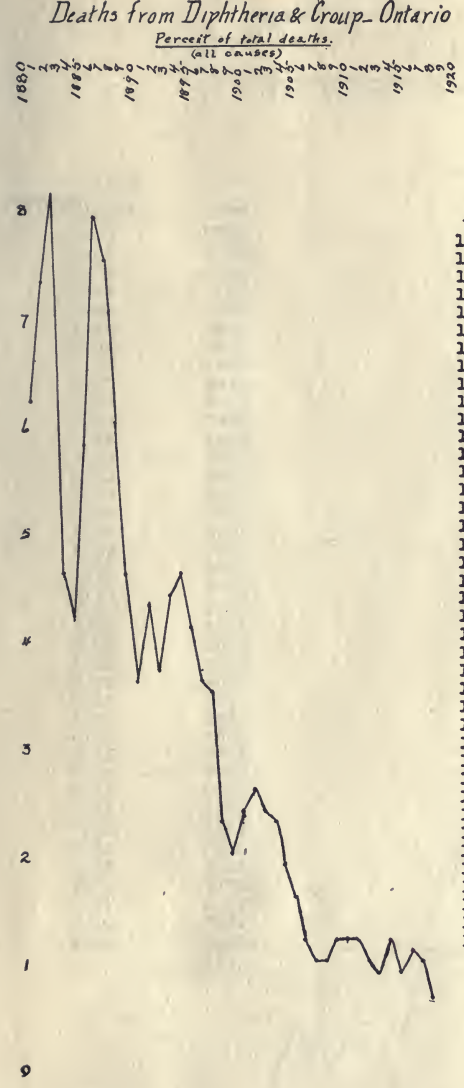
(4) Park —Pathogenic Micro-organisms. 7th Edition, Lea & Febiger, 1920.

Deaths from Diphtheria & Croup—Ontario



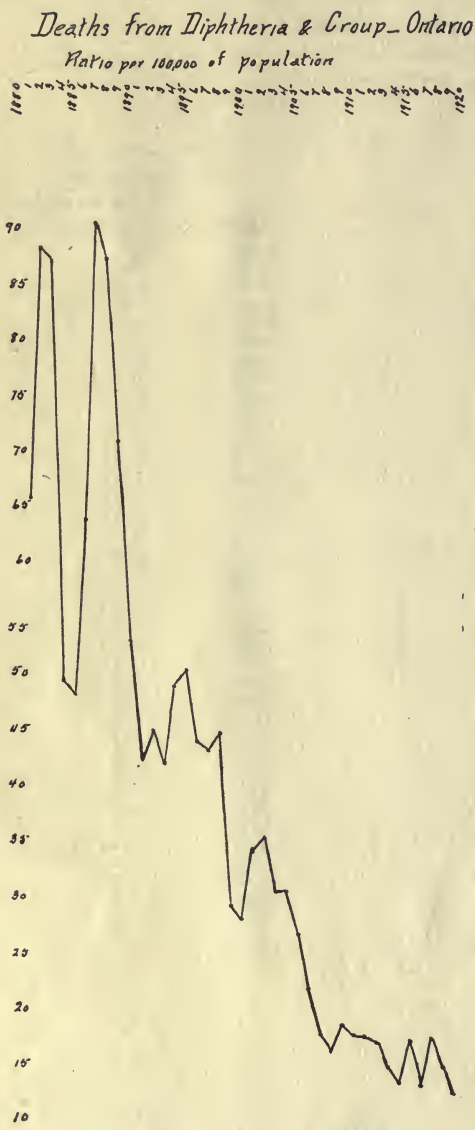
Year.	Total Diphtheria Deaths.
1880	1,251.
1881	1,704
1882	1,708
1883	976
1884	929
1885	1,282
1886	1,833
1887	1,786
1888	1,459
1889	1,101
1890	893
1891	952
1892	890
1893	1,044
1894	1,075
1895	942
1896	925
1897	976
1898	634
1899	599
1900	738
1901	772
1902	676
1903	687
1904	608
1905	503
1906	423
1907	380
1908	450
1909	430
1910	435
1911	423
1912	371
1913	339
1914	443
1915	341
1916	461
1917	396
1918	335
1919	

Fig. 1



Year	Percentage of total deaths (all causes.)
1880	6.3
1881	7.4
1882	8.2
1883	4.7
1884	4.3
1885	5.9
1886	8.0
1887	7.6
1888	6.1
1889	4.7
1890	3.7
1891	4.4
1892	3.8
1893	4.5
1894	4.7
1895	4.2
1896	3.7
1897	3.6
1898	2.4
1899	2.1
1900	2.5
1901	2.7
1902	2.5
1903	2.4
1904	2.0
1905	1.7
1906	1.3
1907	1.1
1908	1.1
1909	1.3
1910	1.3
1911	1.3
1912	1.1
1913	.98
1914	1.3
1915	1.0
1916	1.2
1917	1.1
1918	.77
1919	

Fig. 2



Year.	Ratio per 100,000
1880	66.0
1881	88.6
1882	87.4
1883	49.7
1884	48.3
1885	64.1
1886	90.8
1887	87.6
1888	71.0
1889	53.0
1890	42.6
1891	45.0
1892	41.9
1893	49.0
1894	50.3
1895	43.9
1896	43.1
1897	44.8
1898	29.3
1899	29.0
1900	33.9
1901	35.3
1902	30.5
1903	30.5
1904	26.6
1905	21.6
1906	17.5
1907	15.9
1908	18.5
1909	17.5
1910	17.4
1911	16.7
1912	14.5
1913	13.0
1914	16.8
1915	12.8
1916	17.1
1917	14.5
1918	12.0
1919	

Fig. 3

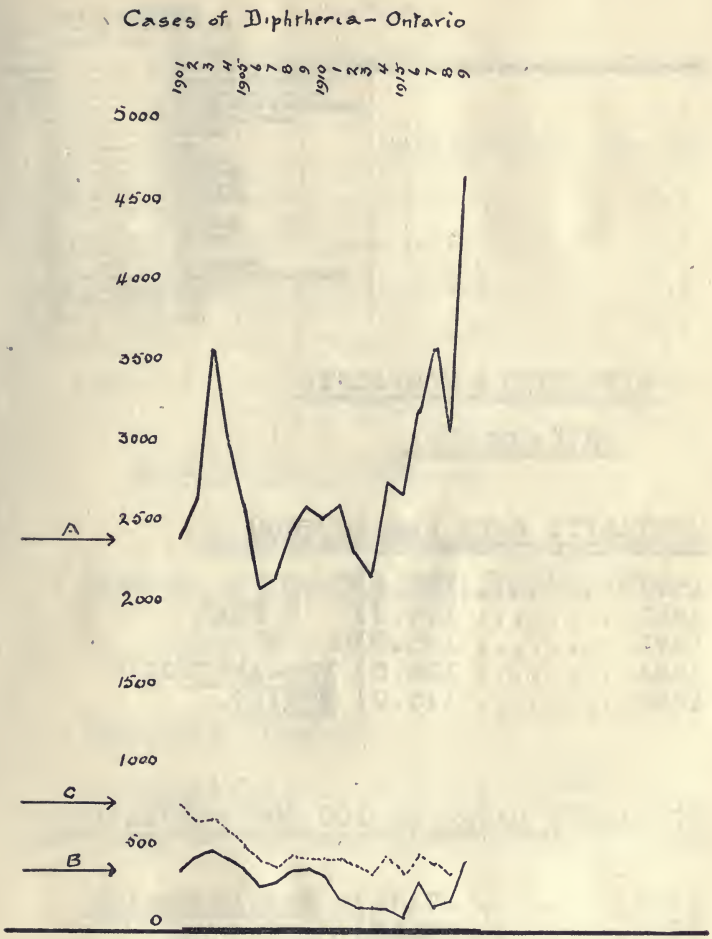

Cases of Diphtheria – Ontario
1901 2 3 4
1905 6 7 8 9
1910 1 2 3 4
1915 6 7 8 9
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
A
B
C
A Cases of Diphtheria reported to Provincial Board of Health.
B Deaths reported to P.B.H
C Deaths registered by Registrar-General.

Fig. 4

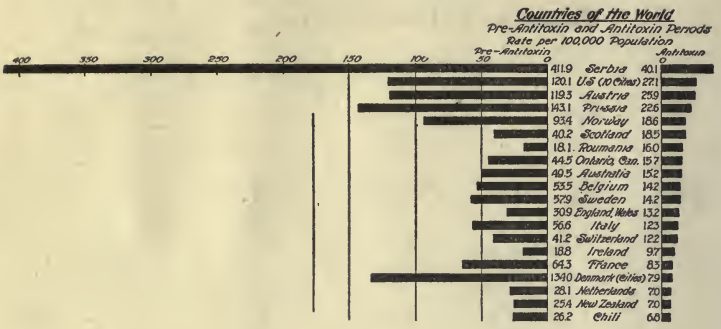


Fig. 5

DIPHTHERIA MORTALITY

PHILADELPHIA.

MORTALITY RATE PER 100,000

1891.....127.4)
1892..... 156.3) 5 YEAR
1893..... 103.9)
1894..... 122.5) PRE-ANTITOXIN
1895..... 115.9) PERIOD.

MORTALITY RATE PER 100,000 population.

1906..... 37.78) 5 YEAR PERIOD
1907..... 34.60)
1908..... 33.35) ANTITOXIN IN
1909..... 33.6)
1910..... 31.7) GENERAL USE

(Kolmer)

Fig. 6

RESULTS OF ANTITOXIN TREATMENT:

NEWARK, N. J., 1895-1915:

Deaths per 100 cases.

	Antitoxin Used	Not Used.
1895 - 1899	10.8	21.6
1900 - 1904	7.3	19.9
1905 - 1909	6.2	23.2
1910 - 1914	5.9	17.6
1915	4.4	18.1

Fig. 7

DIPHTHERIA MORTALITY.

PHILADELPHIA.

AVERAGE MORTALITY FROM DIPHTHERIA.

1909-1910-1911.

Patients treated

in Hospital..... 9.9%

Patients treated

in Private Practice..... 13.0%

(Kolmer)

Fig. 8

CASE FATALITY:

ACCORDING TO DURATION OF DISEASE WHEN ANTITOXIN WAS GIVEN.

PHILADELPHIA, PA. 1910-1914.

Deaths per 100 cases.

First Day.....r.1.1

Second Day.....5.6

Third Day.....6.8

Fourth Day.....7.7

Fifth Day.....9.2

Sixth Day.....9.3

Seventh & later.....11.4

Fig. 9

The Conservation of Child Life

By Dr. A. C. Jost

Divisional Medical Health Officer, Eastern Health Division, Guysboro, N.S. (Association of Medical Health Officers of Nova Scotia, Kentville, July 6th, 1920).

AT no time in the history of the civilized world is there greater need for conservation than there is to-day, and the necessity for conservation is nowhere more apparent than in respect to human life. A world emerging from the delirium of an epoch-marking war is but commencing to count the cost and to appreciate the enormity of its losses. Among these losses not the least is that entailed by the slaughter of millions of combatants of a class most essential for carrying on the world's development, for doing the world's work, a class drawn from what must be considered the most valuable, so far as productivity is concerned, of the world's population. Appreciating this it is unnecessary to comment further on the tremendous necessity of taking every means to replace as speedily as possible these lives sacrificed to the greed of world dominion. Reconstruction demands the effort of every unit which can be put into the struggle to offset the enormous losses of human life and fortune. Even under ante-war conditions, falling birth rates indicated the appearance of a period when the old racial stocks were facing the prospects of gradual disappearance and their replacement by races of alien descent. The tremendous reduction of the birth rates which has accompanied and was caused by the protracted struggle has introduced an unforseen series of conditions which will tend to hasten the process. These factors combine to bring about a condition in which is emphasized the necessity of conserving every life which science or knowledge can preserve.

Every reason appeals to us in our selection of the mortality of the young as our point of attack. On these in a very short space of time the future of the races will depend, for but few years will see entrusted to them the task of carrying on the torch of civilization, dropping from the hands of those who have reached the allotted span, and have completed their work. "Give us the young, give us the young", cries Kidd in his "Science is Power", "and we will create a new world and a new mind in a single generation". While all life is valuable, those lives which have before them the longest future, which have for their guidance and assistance the rapidly accumulating stores of knowledge which the present affords, must be considered the more valuable, if a comparison be permitted. Nor should it be forgotten that the efforts already made to

conserve these lives have been crowned by the most valuable results, and the knowledge of this should spur us on to increased endeavour.

Preliminary to entering into the consideration of the subject, taking it up from the aspect of the child, the parent, and the home, it is desirable to outline as clearly as may be the class who are affected by the efforts aimed at the conservation of child life. Many of you are doubtless acquainted with the instructive series of graphs which depict in the forms of curves the death rates per thousand in the various age groups of England and Wales, which countries, having the advantages of a fairly accurate and quite recent compilation of census figures, together with a system of registration of births and deaths, which is at least quite accurate, are in possession of the data from which information for plotting the curve may be obtained. You will therefore have no hesitation in recalling to your memory the graph, which, commencing at a relatively high place in the scale, (in the vicinity of 100 or more per thousand infants under one year of age, indicating an infantile death rate of approximately 100 per thousand living births), drops suddenly to the vicinity of 60 per thousand for the age group under five years, falls still farther to the vicinity of 4.5 for the children of the age of 5, becomes still lower, in the vicinity of 2.5 per thousand of persons aged 10, from which point it gradually ascends till the age of 45 is reached, after which the rate of ascent becomes higher and higher. My subject, the conservation of child life, deals with the preservation of life during the ages in which the death rate per age group first falls rapidly to the minimum, and then remains more or less stationary before the final rise.

It will thus be seen that to a large extent the influences on the death rate of parentage and antenatal care and of the multiplicity of causes which make the infantile death rate so high have had their effect at a period antecedent to that which we are considering. The stage of existence during which these were at work to their fullest extent has been passed. The dangers of the fatal few months after birth have been circumvented, and the child is entering upon a stage of its existence during which its chances for health and life are apparently the brightest. But low though the death rate be, a very cursory examination is sufficient to make us realize that under proper conditions it is possible to make a still better showing, and to lessen still further the number of deaths occurring between the ages of one and fifteen years. And do not overlook the fact, that measures taken to reduce the death rate will have a tremendous effect on the damage rate of the race as well. Not only the saving of life between the ages indicated will follow well directed efforts aimed at this conservation, but possibly more valuable results will follow in preparation for the after coming years, when these efforts, used primarily to prevent the loss of life, shall have assisted all within these

age groups to pass through the period unscathed by disease or its effects, shall have enabled them to enter into young manhood or young womanhood in conditions of physical health which augur best for the continuation of the race, and shall have encouraged health habits during a formative period of life which will undoubtedly grow to full fruitage in later years.

Consider the rate of race wastage, as brought out by the English recruiting returns. It has been computed that at the age of 18 years one male in four is unfit for military service. At the age of 23, the number is doubled, two persons in four being unfit, the intervening years being accompanied by a rate of wastage, the foundations of which, we are quite justified in assuming, have been laid in previous years. So that efforts at life saving will be followed by damage reduction to an extent the effects of which will be perceptible into ages far beyond those of the period under discussion.

For the purpose of providing some concrete statement of fact around which may be draped the more abstract remarks on the subject, and also to introduce some personal or Provincial element which might appeal to us more strongly than would a like collection of figures compiled from other sources, an analysis has been made of some Nova Scotian figures, grouping in a way most suitable for our purpose, the deaths between the ages of one and sixteen which have occurred during five years of a period between 1911 and 1917.

(NOTE—The figures given are for the years 1911-12, 1912-13, 1913-14, 1914-15 and 1816-17. The figures for 1915-16 are not published by the Deputy Registrar of the Bureau of Vital Statistics. The year 1917-18 was not taken owing to its unusual nature and large number of deaths due to the Halifax explosion and several mining accidents. In the same way, the figures for 1918-19 were not selected on account of the influenza deaths, which made the figures for that year far from what might be considered normal).

During this period the total Provincial deaths were 37,136. Of these 4,177 were those of persons between the ages of one and sixteen. It is not possible in the absence of accurate census returns which give sufficient information of the numbers of our population in the various age groups, to compare our death rates in the various age groups with those of England and Wales, from the returns of which countries the graphs referred to previously in this paper have been prepared. Our registration returns are not sufficiently trustworthy to enable an accurate study to be made. What has been obtained, however, enables us, in a general and more or less valuable way, to determine the groups of diseases which are responsible for these deaths, having which, we shall be in position to consider the means necessary for securing a diminution of the number.

During the period referred to, infectious diseases exclusive of tuber-

culosis were responsible for 944 deaths. Of perhaps but minor significance in the discussion of these is the number of deaths attributable to the different individual diseases. There is no reason to assume that these offer any deviation from the normal in their incidence. It is sufficient to state that during the five years referred to Nova Scotian figures returned 464 deaths from diphtheria and croup, 149 from whooping cough, 119 from scarlet fever and 113 from measles. The important thing about these which it is wished to call to your attention is, that these 900, more than a fifth of the total deaths occurring which affected those of the ages considered, were from diseases which we, from our knowledge of their incidence, their causation, their methods of transmission and their ease of control by measures of proven efficiency, are wont to class as preventable diseases. And who to-day has the temerity to say that this is a misnomer? What facts are there in relation to these which have escaped observation, facts of at least vital importance as regards the problems of their method of transmission, the conditions of their persistence and the measures effective in their control? It begs the question to say, as can be said of some of them, that the actual causative agent has up to the present escaped identification. Granted this, but is not every item of importance in relation to them of common knowledge. No longer is it permissible to accept visitations of these diseases as scourges of an angry God, afflictions to be borne in patience with no efforts to be made towards their prevention, their attacks a necessary evil in our process of development. We realize that they are preventable, and, behold the inconsistency, they are not prevented, though the toll they exact among the most helpless, the most trusting of our race is a terrible one. Who, from personal experience or contact with those whom these diseases consign to early graves, or whose unhappy lot it is to survive destined to carry with them evidences of the havoc the disease has wrought in defective physique, defective sense organs, defective mentality or impaired constitutions, is willing to advance one single argument for their continued existence? Who, after successfully meeting them, localizing their outbreaks within well defined limits by measures the efficacy of which long experience has proven, does not doubt but that with continued effort much greater repression can be secured? Who, knowing these things, escapes responsibility in connection with the slaughter of the innocents which is daily going on around us? We have learned by long experience full and complete information of every detail of the development of these diseases, we have individually, when pressed by personal necessity, made use of the well known repressive measures, and have witnessed the diseases become located, run their courses and die out. What excuses can we offer for permitting the continued inroads of these diseases? Is there one valid argument to be

adduced in extenuation for their continued existence? How can we justify ourselves in a course of action which permits this loss of life among us? How can we condone the carelessness which jeopardises the valuable and vulnerable lives under our care? What argument excuses the lack of faith which holds up its hands in despair and permits these diseases to run riot in our midst? What shall we say of the selfishness which permits us, our own children being safe, seeing those of a neighbour or friend cut down or impaired in the struggle for existence, as results of sequelae following these diseases? How shall we combat the ignorance which regards them as necessary evils, in the course of a child's development, experiences which all must undergo? We cannot escape the conclusion that our carelessness, our apathy and our ignorance are directly responsible for these deaths, and that, but lack of premeditation mitigates the criminality from murder to manslaughter.

It has been stated that tuberculosis deaths were not included among those due to infectious disease. Our Provincial figures intimate that 454 deaths occurred during the period named from all forms of tuberculosis, a number which is proof of the necessity for more active steps being taken in its control.

A fact to which it might be well to call attention is that, whereas during the period named the total Provincial figures appear to have declined, at least so far as the death rate per hundred thousand is concerned, the rate in the age groups considered appears not to have participated in the change. For the individual years the figures are—86, 79, 84, 97, 108, which may indicate a relative increase, though the absence of figures giving the numbers of persons in the age groups makes accurate knowledge impossible. What is possible of achievement however, is a reduction in the number of these deaths if a determined attempt is made to secure it. The wide spread nature of the contagion, the number of latent cases, the difficulty of isolation of those suffering from the disease, and the fact that the problems which its control presents are more often social problems than medical ones, justify our consideration of it in a class by itself. I need not remind you of the belief that to a great extent all infections from tuberculosis occur in the younger age groups. There is ample proof to support this belief, the acceptance of which emphasises the importance of the correct treatment and supervision of persons in these age groups. Little less applicable to this disease than to the other germ diseases are the remarks concerning the possibility of its prevention, and the conviction that our tolerance of it in our midst is the result of our apathy, ignorance or neglect. "If preventable, why not prevented", is the remark accredited to the late King Edward in connection with diseases of this class, and no satisfactory reply has yet been made to the question.

Deserving of comment also is the number of deaths due to respiratory diseases, which total 681 for the period named. The ground can very safely be taken that a great deal can be done to prevent diseases of this class. The infectivity of the common cold is a matter beyond a doubt. Prevent this infection and a great deal of more serious pulmonary or respiratory trouble can be prevented. Cure the cold, or if such an expression be thought heretical by those who doubt the efficacy of any treatment but that of nature, namely time and the formation of the antibodies, take measures in prevention of the sequelae and fatalities are not likely to velop. Do everything possible to keep the child in such a condition of health that infections will likely be easily thrown off or quickly recovered from. There is no doubt but that children, insufficiently nourished or the victims of incorrect feeding, not only are more subject to these infections but have less resisting power should the disease be contracted. Further, by appropriate treatment lessen the number of avenues by which infections may gain entrance. Correct deformities which interfere with normal healthy development. By these measures it is possible to do much in prevention, and if to these is added the protection of children from infection, it is safe to say that these respiratory diseases may be very easily reduced in number.

Diseases of the digestive system claimed 537 victims in the period named. Here again without a doubt were many deaths due to infections occurring because faulty hygiene had prepared the way. Diarrhoeal troubles following incorrect feeding are instances in point.

These which we have considered are but selected groups of disease from a large list. Are we not justified however in our contention that the showing the province has made in the saving of lives by measures directed towards better care of the child itself is one for which little credit can be taken? Do we not feel convinced that better treatment, more frequent examinations, more protection, better hygienic conditions, with all that these measures imply in the correction of faulty diet, supervision in the hours of play and rest, the selection of more suitable clothing and the inculcation of health habits, might have resulted in the saving of many lives?

In connection with our consideration of the effect which parentage has upon the conservation of child life, many and diverse factors are to be considered. In the younger age groups the vulnerability of the young of the species indicated by the normally high death rate is very evident. We may not believe the exaggerated statement that preparation for life should commence two hundred years before birth, but we cannot help but realize that children to be able to pass successfully through the dangerous first years of existence must have the advantage which a healthy parentage bestows. While the fatal first year witnesses the

removal of a large percentage of infants who entered into the struggle handicapped by the effects of parental disease, bad habits, ignorance, poverty, or social or economic status which contributes to make all infantile mortality rates high, the effects of these are also seen in the years immediately following the passage of the child from infancy to childhood. Luckily the ordinary child by the time it has attained the age of one year, has been enabled to adjust itself to many of the assaults made upon it by incorrect habits of feeding or by an incorrect diet, and has developed a most wonderful immunity which under ordinary circumstances carries it along to the period when it can to a greater or less extent look after itself. But not wholly is it beyond the period when the evil effects of parental disase or bad habits can be traced. Venereal disease may still cut short its existence, nor does its fell and fatal power elapse for many years to come. The evils consequent upon a parentage marred by mental instability or deterioration may still make themselves felt. Defective physique and lessened resistance inherited from parents themselves lacking in vitality may be insufficient to enable the child to weather the storms incidental to existence, and in short, all the factors which aid in bringing about a high mortality during infancy still have a marked though diminishing effect.

During the later periods of childhood, a different set of conditions are to be considered, conditions affected to a much greater extent by the social and economic status of the parent. Are the parents ascending in the social scale, or are they victims of disease, bad habits or defective mentality, instead of becoming more and more able to meet in comfort the expenses incidental to a proper care of the family, sinking in poverty and becoming less able to procure the attention which the child requires? Have business reverses been encountered? Is the wage earner able to procure the necessities of life for his family, or in the never ceasing struggle between capital and labour has his comfort been gradually encroached upon and he become less able to provide for those dependent upon him? Have waste, immorality or the pursuit of unworthy ideals resulted in a moral starvation which reacts injuriously on the physical condition of the family?

Nor must we forget the parent's economic status. Poverty which permits no more than the supplying of the merest necessities for existence does not conduce to a continued healthy condition of the parents, a condition on which the safety and wellbeing, nay the very life of the child may depend. Is the mother herself one of the wage-earners of the family?

Fortunately, woman or child labour in unhealthy factories is not one of the evils which we in Nova Scotia are forced to correct. I cannot however but refer to one aspect of this question of which I have no doubt

all of you who have country practises have seen instances, namely, instances of impaired nutrition in the families of farmers, due wholly to the fact that the high prices to be obtained in the markets for their produce have induced them to deprive themselves so much of the most valuable and highly priced articles of food that the remainder has not been sufficient to meet the demands of the family by providing sufficient mourishment for their needs. Without a doubt there are communities in Nova Scotia where this condition exists, where the choicest articles of food must be sacrificed to meet living expenses while the residue proves insufficient for the demands of growth and health.

But doing what is possible to secure a healthy parentage is not sufficient, for these can only remain so if their environment is such as is compatible with the maintenance of the standard of health considered necessary. The home, in other words, must be healthy. And a healthy home cannot be found where conditions of poverty enforce overcrowding in unsuitable unsanitary tenements, where privacy is not obtainable, where personal hygiene cannot be attended to, and where the living conconditions or the aspirations of the parents do not lend themselves to the creation of the atmosphere which distinguishes a home from a mere place in which to eat, sleep and live.

See the influence which overcrowding has on the infantile mortality rates. Where an opportunity for the study of their aspect of the question has been found, it has been computed that the infantile mortality rate of infants born in one roomed tenements in a certain city was 219 per thousand. In two roomed tenements it was 157 per thousand. In three roomed tenements it sank to 141 per thousand and among the families occupying tenements of four rooms or over it was but 99 per thousand. If overcrowding is attended with such deleterious effects on infant life, and there does not seem to be reason to doubt the conclusions arrived at, how can we escape the inference that its effects are little less baleful on those of greater age? But overcrowding is only one evidence of faulty home sanitation. Water supply, sewage connections, dietetics in its relation not only to the quantity and quality but also the proper preparation of food, ventilation, all are of importance, and the proper or improper attention paid to them may constitute the difference between health and disease, between life and death.

The homes having been brought to a proper standard individually, it follows that the first step has been taken towards a satisfactory community hygiene. The especially important community building which it is desirable to keep in a condition as nearly approaching sanitary perfection as is possible is the school, in which a large portion of the time of a normal child is passed. So it would seem, but in practise it is a most regrettable fact that indivuals who will not countenance a breach

of hygienic observance in their own homes will tolerate, without comment, in the schools their children attend a condition of affairs which is most deplorable. This community building should be a model of everything which is most desirable from the point of view of health maintenance. How often is it the reverse. Why teach hygiene in the schools if the schoolhouse is itself a model of unhygienic construction, if the outbuildings are, as they very often are in rural sections, abominably filthy, and if a child's acquaintance with infectious disease is usually coincident with its commencing school life.

I have notes of more than thirty school houses which I have recently inspected. One school was found which had satisfactory toilet accommodation for the pupils. In one more the seats were not contaminated with urine and faeces. In the remainder without exception, urine and faeces were over the seats and on the floors. Many buildings had defective doors and windows, many were most dilapidated and in a tumbling down condition. The majority were not constructed over any pit or box to catch the discharges, and not one was screened. Instead of being places where health habits are taught, our schools are very often places where the good effects of health teaching from other sources are irretrievably obliterated.

I shall deal very briefly with the consideration of the illegitimate and the abandoned child. I need not remind you the infant mortality rate of the illegitimate infant is ordinarily double that of the infant of legal status. We are, I am quite sure, safe in saying that the death rate during childhood is correspondingly large. How can it be otherwise, bereft of every condition which makes for normal healthy happy childhood. Too often, the illegitimate, these wards of society, are meeted out a treatment, which, were it designed to be a species of torture the ultimate aim of which was the death of the victim and the relief of society from the burden of its maintenance, would be a gigantic success. Yet these lives are as valuable as are others, preliminary to whose birth some cleric has mumbled some uncomprehended jargon. Their inherent capabilities may be as greta, their futures as brilliant. The manner of their coming into the world is no excuse for their being callously and brutally hurried out of it.

Without a doubt their value as members of society will, under the circumstances resulting from the great war, be more fully appreciated, and the treatment meted out to them in the past will not be longer tolerated. Much work has already been done in attempting to get for these poor unfortunates a chance for existence equal to that enjoyed by others whose existence is somewhat more regular but no less innocent. The introduction of the Speedwell system for the care of these, a system which aims to have children of these classes looked after in foster homes

in suitable families rather than being looked after in institutions, has been followed by great reduction in the death rate, and without a doubt will result in the turning out of better children, healthier both physically and mentally.

Even with theis very brief survey, it must be appreciated that tremendous returns will repay careful conscientious and well directed work done towards conserving the lives of children in these age groups. These who have been dying are not the unfit of the race. Saving these would not run counter to the evolutionary process going on around us, for the doctrine of the survival of the fittest does not apply where social evolution is concerned. Let there be no doubt of the results, if the problem is attacked in a way which its importance demands. The record which medical science has made during the past few years is a proud one. We can look back over the noteworthy achievements; suffering curtailed, disease conquered and life lengthened; and the survey justifies confidence in the ability to solve any problem the future may send or the present sees still unsolved. See what was done during the past five years of war when preventive medicine cut down disease deaths to less than one eighth the battle deaths, a record unprecedented in history. War's necessities demanded the prevention of diseases in order that the wastes of the armies might be reduced to a minimum. Peace now demands, more urgently if possible, the conservation of life, that war's ravages may be obliterated as speedily as possible. The methods to be followed are the same in peace and in war, the minds to outline the policy are the same. Have we the energy, organization and insistence upon results which established that record?

A Plan for a More Effective Federal and State Health Administration

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(*Continued from the October issue*)

Proposed National and Local Health Centres

The effective administration of public health depends in no small measure upon the proper housing of the health administration. With few exceptions the health organizations of the several States and municipalities are inadequately housed and frequently disgracefully so. In numerous conspicuous cases the office conditions symbolize official indifference to snaitation rather than rigid conformity to ideal sanitary reguirements. If moedrn civic pride insists upon the adequate housing of general governmental activities, this attitude has not as yet extended to the Health Department, although it is mow quite generally observed in the case of court houses and public libraries. The progress which has been made in Federal buildings is also suggestive of the direction to be followed in the future housing of the Federal and local health administration. It would, however, seem decidedly preferable to assign to the heelth administration a separate building, the exterior and the interior construction of which should be in conformity to a thoroughly worked out plan of efficient coordination of essential functions as obviously most advantageous to the administration itself and the general public. The outside impression should at once convey the idea of a temple of hygiene rather than of any other branch of the Government, however important for public purposes. Certainly in the case of the Federal Government there is now the most urgent need for a new and thoroughly equipped as well as efficiently coordinated separate building for the adequate housing of the U.S. Public Health Service. A standard type of architecture might be developed so as to accustom the public mind to the idea that the public health administration as thius housed typifies the ancient conception of a temple of hygiene or a house of health. In the case of municipalities and counties such a building might be constructed in a manner of providing not only for the central organization of the health administration, but also on the one side, first aid, dispensary, infirmary and hospital facilities, and on the other the necessary office facilities for the registration of births, marriages and deaths,

the physical statistics of the growth and development of the juvenile population, and finally for the records of diseases and other data, as essential to a well coordinated plan of public health administration. As thus conceived such a building would constitute the *health centre* of the community and it might easily be provided with an auditorium for lectures on health and welfare contributory to the health educational propaganda efforts of the local health administration. By combining the administrative health functions with other essential auxiliary duties and health promoting efforts, the health centre could be made the radiating source of all local health activities, both public and private, the thoroughly effective coordination of which is never likely to be secured otherwise at the required minimum of time, labour and expense.

Public Health Library, Sanitary Information and Statistics

Effective teaching methods depend in a large measure upon adequate library facilities. There should be brought into existence a great national Library of Public Health Information and Statistics, including the graphic presentation of mortality and morbidity facts not only for the United States, but for all important countries of the world.* Such graphic illustrations should not, however, be limited to mortality and mobridity, but an effort should be made to correlate such information to climatological, pathological and other scientific data useful for the purpose. At the present time a vast amount of useful information is available only through general medical libraries which cannot possibly meet highly specialized practical requirements. In course of time there should be coordinated to such a library a Museum of Public Health more or less in conformity to the principles which govern in the arrangement and development of the American Museum of Safety. The methods of health instruction require to be made much more objective than is generally the case and special emphasis should be placed upon demonsrrations of simple methods of sanitary surveying as absolutely essential to the development of rational plans of sanitary reforms. There is entirely too much reliance upon book teaching and insufficient attention to the urgency of personal contact with the actual facts of the sanitary and related sciences which require to be dealt with in every-day life.

*On the occasion of the Panama-Pacific Exposition, San Francisco, 1915, The Prudential Insurance Company of America made an exhibit of mortality facts, presented by a large number of charts, descriptive in part of the Geographical and Race Pathology of the Western Hemisphere. The exhibit has since been made a permanent one, together with other charts of mortality tendencies from particular diseases, the relation of height and weight to the mortality from specified causes, the influence of family history, etc., at The Prudential's Home Office, No. 9 Bank Street, Newark, N.J. Descriptive publications are available on request.

It has been said that the three fundamental ends of teaching are knowledge, power and skill. To secure these ends in public health administration obviously necessitates much more adequate teaching facilities and teaching methods of a much higher standard than those available to the earnest and conscientious student at the present time.

The Proper Place of a Federal Health Administration in the Federal Government

The proper official status of a Federal Health Administration would not seem to be a position in the Cabinet, but rather as an entirely independent Federal department, responsible directly to the President. Every position in the Cabinet is primarily political in its nature and for purposes of administrative guidance and control under our form of government and responsibility on a paristan basis. The introduction of politics into a Federal Health Administration would be lamentable and lead in the end with practical certainty to the defeat of even the best conceived measures of reform. The remarkable success of the U.S. Public Health Service has its origin in the fact that throughout its entire history of more than a hundred years, first as the Marine Hospital Service and subsequently as the U.S. Public Health Service, the organization, broadly speaking, has been kept entirely out of politics. If it has been found practically feasible to administer and control the interstate railways through the Interstate Commerce Commission, directly responsible only to the President, it should not be difficult to bring about a corresponding organization on the part of a Federal Health Administration concerned exclusively with the public welfare and with nothing else. By a mere accident of early circumstances the Marine Hospital Service was placed in the Treasury Department, but it should require no argument to sustain the point of view that the enormous interests involved in an effective public health administration even through the U.S. Public Health Service as at present organized can not be adequately met by a Cabinet officer concerned primarily and chiefly with questions of public finance. It is, therefore, to be hoped that in the event of a complete reorganization of all Federal health agencies the new organization will be placed on the basis of a separate administrative function directly responsible only to Congress and the President.

To be Continued.

Social Background

The Meaning of Poverty

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General Secretary, Charity Organization Society, Buffalo, N.Y.

Read at Anuual Meeting of the Canadian Conference on Public Welfare, Hamilton, May 10th and 11th, 1920.

I SPEAK at your session to-morrow afternoon on Problems of Relief, but I am glad that for this evening I was asked to choose a popular rather than a technical subject. In a city like Hamilton, which I suppose has a population of nearly 150,000, there should be many present at the evening sessions who are neither professional social workers nor, as yet, even volunteers. Volunteers are as much needed by us as in the world war, where no doubt you responded splendidly.

The French have a saying: "The kinc is dead; long live the king!" (*Le roi est mort; vive le roi!*) So I say: The war is dead; long live the war! We have won the war against militarism and irresponsible autocracy; and now on with the fight in our war, the social workers' war, the war against poverty, which is a more dangerous enemy than even Germany. It is also a more lasting enemy, and a more brutal enemy. There were pacificists in the war against Germany, and even pro-Germans; but I never heard of a pacifist in our war, or of anyone who was pro-poverty.

THE WAR ON POVERTY.

I want to make you feel, if I can, that poverty is a real danger to you—the comfortable, as well as to the poor—and that it is a danger to the city, the state, and the nation. The poor are to some extent wonted in their poverty, and some few of them even deserve it. It is the well-to-do for whom I am now concerned. There should be the same thrill in our war as in the world war. I do not mean the thrill of slumming, for those who hope to find in the lives of others an excitement which they miss in their own. We want none of these. We want you, however, for we are too few. As Shakespeare says, "We few, we happy few, we band of brothers."

There is dangerous fighting, too, in our war. I was a classmate

at Harvard of Theodore Roosevelt, and I have often said that Roosevelt found quite as dangerous enemies in New York and Washington as in Cuba or in the jungle. Once when speaking at Reading, Pennsylvania, I said that there is just as good fighting in social service as in military service; and the morning paper reported me as saying that there is just as good fighting in social circles as in military service!

Poverty is sometimes a blessing. Benjamin Franklin said that to be born poor is to be thrown into the very lap of fortune, for we are forced to develop our own resources. Old Simon Cameron of Pennsylvania is reported to have said: "My son, Don, has had many advantages, but I had one which was worth all of his—poverty." These are half truth, however, though poverty is often a spur.

There is a difference between voluntary and involuntary poverty, and between hopeful and hopeless poverty. I look forward to the day when involuntary, innocent poverty will be adequately assisted; and when voluntary, wilful poverty will be punished, as it should be, when opportunities are equal. Then poverty in its present sense will cease to be, but this will not come until we have a different social justice from what now exists. To-day many of our poor are foredoomed, and see no escape from an industrial poverty which seems to be almost increasing. Poverty of the hopeless sort, from which strong and capable men cannot extricate themselves, is debasing and demoralizing both to the individual and the state.

The rich and the poor have misconceptions about each other. The rich often think the poor idle and corrupt, and the poor as often think the rich idle and corrupt. Of course, there are the sturdy, industrious poor, as there are the simple, industrious rich; but, on the whole, there are more idle rich in proportion to their number, than idle poor, and they are more dangerous. There are also more vicious rich in proportion to their number than there are vicious poor, and they are more dangerous. Gilded vice is more dangerous than vice ungilded. It has more power, it is imitated more, and it has less excuse, for the vices of the rich are due more to desire than to temptation. On the whole, rich and poor are much of the same clay. It was a fine saying of John Bradford, five centuries ago, who said as he saw some criminals going to execution: "There, but for the grace of God, goes John Bradford." Another fine saying is that of President Hadley of Yale, that life is a trust. If life is a trust, we must fulfil that trust, and not embezzle for personal use the gifts or money which were given us for others.

The Applied Religion.

I spoke of our war against poverty. It is a holy war, and we are crusaders. As social workers we minister more than many ministers. Our church is the Church of the Divine Fragments, or the Church of Broken Lives. Ours is what I call applied religion. What we say to God we must do for man, or what we say to God is insincere.

Saving your own soul only may be selfish business. If Martin Luther had thought too much about saving his own soul, what would have become of the Reformation? Every monk in Rome told him that he would go to hell, and Luther took his chances for the truth as he saw it, and to help the world, and many of us think he helped the world. A man may keep all the Ten Commandments, but if he never lifts a finger to help the town he lives in, he will not go to any heaven where I care to join him. It is important to save our souls, but it is also important to save our city and our country. We want not only to make the world safe for democracy, but to make democracy safe for the world.

Interdependency of Poverty.

My subject is The Meaning of Poverty. We ought all to realize that the rich and poor are one family, and that we live in one house. If the cellar of that house is foul, will the house be sweet? If there are weeds in a garden, will the flowers thrive? It is not always easy to distinguish weeds from flowers. Our common mullein, which grows with us by the wayside, is said to be displayed in England as the American velvet flower.

It makes me angry to be told that in helping poverty we are un-Darwinian, and that it checks the survival of the fittest. A clever friend of mine said once that he believed in the survival of the fittest, but not in the survival of the fattest. We can neglect poverty, but if we neglect poverty it will not neglect us, for neglected poverty is a running sore which poisons the whole body politic. The diseases of the poor cross ward lines. The vices of the poor cross ward lines, and the votes of the poor cross ward lines. I often say that the only way to have a better city is to have better citizens, and that the only way to have better citizens is to give them better opportunities for health, education, and morality. By doing so we shall also lessen poverty; for disease, ignorance and sin are three of its chief causes.

The Causes of Poverty.

I am often asked the chief causes of poverty. Of course disease, ignorance and sin are three; and I like to say that the health department, the school department, and the police department can do more to lessen poverty than any charity organization society; for, by lessening disease, ignorance and sin, they hit three body blows at poverty. Misfortune, again, is a chief cause, and by this I mean such mischance as widowhood or disabling accident. Lack of opportunity is one of the greatest of all causes, and so is social injustice. The American Association for Labour Legislation bears on its letterhead the sentence: "Social justice is the best insurance against social unrest." So it is, and social unrest is dangerous, but so is social rest. I hope there will never be social rest, for that would mean stagnation. Lack of character is also a primary cause of poverty; but I do not mean so much lack of character among the poor, as lack of character among the rich, who control many of the causes of poverty. It is the rich who are responsible for the twelve-hour day, the seven-day week, the starvation wage, and the crowded tenements which breed disease and vice. Some one has well said that many of our tenements have an iron fire escape but lack a moral fire escape.

I look forward to the day, and see it coming, when the stigma of the word charity will be removed because charity will concern itself not so much with poor people as with poor lives, and when charity will be thought of not so much in connection with poverty as with the social use of life by all alike, rich and poor. The social sins, which make all society poor, are as conspicuous as contagious, and quite as dangerous among the rich, as they are among the destitute. Modern charity will have as much to do with the trusts, the tariff, and the city government as with the poor.

I have a slogan for poverty borrowed from the old tuberculosis slogan of twenty years ago. It is not the one from Shakespeare in Hamlet's soliloquy, "Tb. or not tb.," but this: Poverty is a communicable disease; poverty is a curable disease; poverty is a preventable disease. Undoubtedly it can be communicated, and just as undoubtedly it can be cured and prevented. Are we doing this? Are we succeeding in our war against poverty? Assuredly we are.

Bestial, squalid poverty is going. The poor of America have meat once a day, spring beds, clocks and carpets, and send their children to school. We have changed the definition of poverty, and American poor families now exact from society a standard of living

which the poverty of Asia and Europe cannot obtain. The poverty of America is as different from the poverty of Asia as the intelligent American farm hand is from the man with the hoe. Yet there are thousands now living here in a condition of poverty which another generation will not tolerate.

We can show success in my home city of Buffalo. In 1876, the year before our Charity Organization Society was formed, the city outdoor poor relief was $112,053. Nearly forty years later, in 1914, with a city four times as large and a larger amount of immigrants, it was $59,549. By actual count, there are fewer dependent families, and we count now incipient poverty, which formerly we hardly recognized. Is it true that the rich are growing richer and the poor poorer? The rich are growing richer, and there are vast fortunes such as were previously unknown, but the poor are not growing poorer. There is no such poverty now as in the time of Dickens or of Hogarth. Those who are neither rich nor poor are increasing most of all. I mean those who will not sacrifice life to money, and who prefer living to money-getting. Our problem now is not so much the dependent poor as the independent poor; not starved bodies but starved lives.

Modern Poverty.

Even to-day, since the war, the wages of unskilled labour hardly allow the necessary decencies of life for good citizenship. For a man and wife and three young children aged 12, 10 and 6, which is a normal family at its costly period, our present budget is $94.07 per month, or for a year about the income of a four-dollar-a-day labourer working 300 days. But this budget does not allow recreation, saving for a rainy day, or other essentials. To quote, with adaptations, from Rowntree's classic book called "Poverty" (p. 133): "Families living upon the schedule allowed for in this estimate must never spend a cent for railroad fare or street cars; they must never purchase a penny paper or spend a nickel for the movies. They must write no letters to absent children, for they cannot afford the postage. They must never contribute anything to their Church, or give any help to a neighbour which costs them money. The children must have no pocket money for dolls, marbles or candy. The father must smoke no tobacco and must drink no beer. Everything bought must be of the plainest and most economical description. Should a child fall ill, it must be attended by the city poor physician. Finally, the wage-earner must never be absent from his work a single day."

"This may seem an over-statement, for in thousands of families with a smaller income than $4 a day the men do smoke and do spend on dress and recreation. The unseen consequences of poverty have, however, to be reckoned with. We see the labourer healthy on smaller income, but we do not see that to give him enough the mother and children habitually go short, for the mother knows that everything depends upon the wages of her husband. We see the man spend for tobacco and beer, but we do not see the children growing up to anaemic and unsafe citizenhood." (P. 135.)

We must allow the poor some extravagances, like that of the hungry little girl who bought red kid shoes which her soul craved. When I am financially blue, a small extravagance encourages me. One of the chief unkindnesses of the rich to the poor is that of expecting too much of them. The rich often expect the poor to have all the virtues of Epaminondas and Socrates, with a few saints added.

Some social workers do not believe in individual work for single families as a cure for poverty. They say they believe only in community or mass work, which attacks the roots of poverty. It is true, as they say, that we can no more abolish poverty by individual case work with single families than we can fill a sieve, but we must remember that the case work is the foundation of the mass work which attacks the roots of poverty, for we must look before we leap.

The Attack on the Cause.

Moreover, poverty has as many roots as a banyan tree, and to kill it, it is not enough to cut one root. We must remember, too, that the roots of poverty and of wealth are intertwined, and that some of the more radical socialistic remedies which touch the roots of poverty, touch also the roots of wealth, and may kill the tree which bears both. I claim that both wealth and poverty are *grafts* on the same sound stock. I want less poverty in the world, and I want also less wealth.

Health made great strides when the doctors in addition to curing individual patients began to attack the causes of disease through public health, and morality made as great strides when the ministers added to their saving of single souls an attack on the great causes of sin. The other side of this is illustrated in a story of Julia Ward Howe and Senator Charles Sumner, of Massachusetts. Mrs. Howe asked Sumner's aid for a single slave, and the tired Senator said that he had given all his life to the Negro race, but

that he had advanced beyond the individual. "I do congratulate you, Senator," said Mrs. Howe, "if you have advanced beyond the individual. Even our Lord Jesus Christ never advanced so far as that." She had him, of course, though in a sense both were right. We shall never outgrow the model charity of the Good Samaritan, who did not send another, but went himself to help a single sufferer not of his own race and not of his own faith; but it has been well said that it would have been a still higher charity, and kinder as well as wiser, to keep the road to Jericho clear of thieves so that the man would not have been robbed and beaten.

I want the individual to do much, but I want the city to do more. I believe in public recreation, for as Joseph Lee well says: "The boy without a playground becomes the man without a job." I believe in public health. It is expensive, but no matter what health costs, disease costs more. Disease is more contagious and more dangerous than ignorance; and, just as I believe in free compulsory education, I believe in free compulsory health. As private schools are only for those who prefer them and can afford them, private doctors may soon be only for those who prefer them and can afford them.

Of course, all this means higher taxes; but I believe in higher taxes for good social work if well administered. I am not so much interested in taxes for commerce as in taxes for citizenship. I believe in taxes for schools, and I believe also in taxes for health and morality, so that the burden borne now by a willing few will fall also on the less willing many. If this is socialism, I am an incipient socialist.

The Right to a Full Citizenship.

The poor to-day have "a hundred advantages that were wholly out of reach even of the well-to-do man living in towns forty or fifty years ago." I am quoting Albert Shaw in his book, "The Outlook for the Average Man," p. 44, published in 1908. He says: "It is nowadays regarded, not as a wild dream, but as a fairly sober and reasonable proposition, to demand that the poor man may at least live in a model tenement, on an asphalted street, with pure air to breathe and with pure water to drink; that he may be surrounded by marvellous safeguards in the way of health protection and police and fire protection; that he may send his children to the very best of schools; that in the evening he may read the best of books from the free public libraries, by gas or electric light cheaply furnished; that he may hear the best lectures without price; may attend excel-

lent free concerts, visit beautiful parks, public museums and galleries of art, look upon noble architecture and monumental statues with a feeling of pride and a sense of common possession; that he may ride swiftly and luxuriously in public vehicles at small price, and that he may be safeguarded against the worst dangers of illness or old age through one form or another of benefit funds or social insurance." "The poor man, too, under the eight-hour system, is to have his leisure, his books, his music, his pictures, his parks, his opportunities of quick travel, his swimming bath, his gymnasium, his golf course, and a hundred advantages that were wholly out of reach even of the well-to-do man living in towns forty or fifty years ago."

It is a wise city that spends for things like these. I like my friend Raymond Robins' version of the Lord's Prayer: "Thy kingdom come, thy will be done in Hamilton as in heaven." He says, don't say "on earth"; make it definite and local.

God does not do His work so much through miracles as through men and women. God needs us, and we must not fail Him. We must help God. Who was it said: "Am I my brother's keeper?" It was Cain who said this, and Cain is hardly an example.

By work like this we achieve utopias, for to-day would seem utopia to John Ball or Wat Tyler. Utopias, however, recede as we approach them, for when we have achieved one we see another before us.

In whatever way we approach this problem of poverty it is one that is worthy of the best ability of the best of us. Those of us who engage in this work can not only save pain, but can save lives; and by giving better opportunity to the poor and better public spirit to the rich, we can lift character and so help save the state. This I call applied religion, and it is the kind of religion I most believe in.

Cases and Deaths of Communicable Diseases reported by Local Boards of Health for the Month of September 1920

COMPARATIVE TABLE.

Diseases.	Sept. 1920. Cases.	Deaths.	Aug. 1920. Cases.	Deaths.	Sept. 1919. Cases.	Deaths.
Small-pox	93	1	171	0	48	1
Scarlet Fever	188	3	173	4	187	4
Diphtheria	434	51	273	36	291	39
Measles	142	5	626	10	51	1
Whooping Cough	177	15	178	21	141	9
Typhoid	75	11	67	10	101	31
Tuberculosis	180	113	192	129	105	93
Infantile Paralysis	7	2	5	1	9	0
Cerebro-Spinal Meningitis	5	4	6	6	6	5
Influenza and Pneumonia	6	6	6	6	.....	89
Acute Primary Pneumonia	.....	46	.....	96	.....	.....
Relapsing Fever and Dysentery	32	5	18	3	.....	.....
	1339	262	1815	322	939	272

Venereal Deseases reported by the Local Officers of Health

	Sept. 1920 *Cases.*	Aug. 1920 *Cases.*	Sept. 1919 *Cases.*
Syphilis	157	208	115
Gonorrohea	213	217	131
Chancroid	8	8	7
	378	434	253

SMALL-POX.

The incidence of small-pox in the Province for the month of September shows a very material decline, 27 municipalities reported

93 cases with 1 death, compared with 171 cases for the month of August. The municipalities reporting the greatest number of cases are: Ottawa 13, Sault Ste. Marie 8, Belleville 4, Augusta Tp. 7, Brooke Tp. 15.

Scarlet Fever.

The returns made for this disease show but little variation with the former month of the year in the number of cases reported, only three deaths occurred during the month.

Diphtheria.

It will be observed in the comparative table there is a considerable increase in cases and deaths over that of August, which would indicate the disease is still prevalent in some localities in the Province, but not to the same extent as in the earlier months of the year. While the cases and deaths given in the quarterly returns ending September 30th, greatly exceed those of the corresponding months of 1919, the case mortality is very little higher, being 13.1 as against 12.8.

Venereal Diseases.

It will be noticed that the number of venereal cases reported has increased greatly over the number a year ago. Undoubtedly this is due to the vigorous campaign now on against venereal diseases. In spite of this there is no doubt that many cases still are not reported. To obtain some definite information along these lines a monthly report of the numbers of Wassermanns and smears handled on new cases is now sent to the Provincial Board of Health from the Provincial Laboratories. These are interesting when compared with the cases reported by the local Medical Officers of Health and prove that many cases are never reported by them.

Disease.	Reported by local M. O. H.	Reported by Prov. Lab.
July, 1920—		
Syphilis	131	161
Gonorrhoea	135	44
August, 1920—		
Syphilis	208	170
Gonorrhoea	217	56
Sept., 1920—		
Syphilis	157	226
Gonorrhoea	213	76

Communicable Diseases for the Quarter ending September 30th, 1920

	1920.		1919.	
Diseases.	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*
Small-pox	406	1	129	2
Scarlet Fever	530	11	461	9
Diphtheria	1,009	133	667	86
Measles	2,187	30	198	1
Whooping Cough	461	41	333	29
Typhoid	177	29	204	55
Tuberculosis	533	324	511	349
Infantile Paralysis	14	3	19	0
Cerebro-spinal Meningitis	14	13	25	23
Influenza and Pneumonia	0	280	0	207
Relapsing Fever and Dysentery	50	8	0	0
	5,381	873	2,547	761

Venereal Diseases reported by Medical Officers of Health, Quarter ending September 30th, 1920

	1920.	1919.
	Cases.	*Cases.*
Syphilis	496	302
Gonorrohea	565	439
Chancroid	17	18
	1,078	760

Municipalities reporting Small-pox for Month of September, 1920

County.	*Municipality.*	*Cases.*	*Deaths.*
Algoma	Sault Ste. Marie	8	0
Brant	Brantford	2	0
Bruce	Carrick	1	1
Carleton	Ottawa	13	0
Essex	Essex Border	2	0
Frontenac	Hinchinbrook	1	0
Grey	Meaford	2	0
Halton	Georgetown	3	0
	Acton	1	0

County.	*Municipality.*	*Cases.*	*Deaths.*
Hastings	Belleville	4	0
	Trenton	7	0
Lambton	Brooke	15	0
Leeds & Grenville	Elmsley S.	4	0
Lennox & Addington	Augusta	7	0
Muskoka	McLean	1	0
Parry Sound	McKeller	1	0
	Humphrey	1	0
	Spence	1	0
Prescott & Russell	Cumberland	2	0
Renfrew	Grattan	1	0
Sudbury	Sudbury	3	0
	Copper Cliff	1	0
Temiskiming	Cobalt	1	0
Waterloo	Galt	3	0
Wentworth	Hamilton	4	0
York	Toronto	2	0
	Newmarket	2	0
		93	1

The Vancouver Meeting

Resolutions passed on the occasion of the annual meeting of the Canadian Public Health Association, June 21st and 22nd, 1920:

Resolution No. 1—

Resolved that the Canadian Public Health Association take this opportunity of expressing to the Canadian Red Cross Society its deep appreciation of the active efforts made by that organization in furtherance of Public Health activities in the Dominion of Canada. Further, that this Association congratulates the Red Cross Society on the definite efforts made by the Red Cross toward the co-ordinating and stimulating of efforts making for the health of the people.

The Association also desires to express its approval of the plans of the Red Cross at their present stage of development, and particularly desire to congratulate the Society on the appointment of a consultative and advisory council. The members of this Council representing both voluntary and official agencies will now have an opportunity of more clearly understanding their relationship to one another, as well as the importance of each as a unit in the general attack on disease.

Moved by Dr. L. M. Lindsay, Montreal; seconded by Dr. R. H. Mullin, Hamilton.

Resolution No. 2.—

Resolved, that the Canadian Public Health Association is of the opinion that in view of the Government action now being taken to limit the incidence of venereal disease it is essential that standardized Wasserman methods should be recognized throughout Canada, and that they suggest that a committee of serologists be appointed to draft such standardized Wasserman methods which can be recommended to the Canadian and Provincial Government being suitable for use in the public laboratories.

Moved by Dr. Lockhart, seconded by Dr. Mullin.

Resolution No. 3.—

Resolved that this Association express its warm appreciation of the hospitality and hearty welcome extended to its members by the Rotary Club of Vancouver.

Moved by Dr. George Clinton, seconded by Miss E. M. Forsythe.

Resolution No. 4.—

Resolved that the Association express its gratitude to the Graduate Nurses' Association and to the Women's Canadian Club for their kindly hospitality extended to the visiting ladies of this Association on the occasion of our annual meeting.

Moved by Dr. J. W. S. McCullough, Seconded by Dr. Moloney.

News Items

A meeting of the Dominion Council of Health, the advisory body to the Department of Health, Canada, was held in Ottawa on October 25th and 26th last. The following members were in attendance: Dr. H. E. Young, Victoria; Dr. T. J. Norman, Edmonton; Dr. Gordon Bell, Winnipeg; Mrs. W. E. Todd, Orillia; Mr. H. J. Halford, Hamilton; Dr. J. W. S. McCullough, Toronto; Dr. J. G. Fitzgerald, Toronto; Dr. E. Pelletier and Miss Helen R. Y. Reid, Montreal; Mr. W. F. Stephens, Huntingdon, Que.; Hon. Dr. W. F. Roberts, St. John; Dr. W. H. Hattie, Halifax; Dr. I. Yeo, Charlottetown.

The following matters were discussed: Child Welfare, Venereal Diseases, Relationship of Official Public Health bodies to the Canadian Red Cross Society, the Opium and Narcotic Drug Act, the Question of Provincial Franking Privileges, the Food and Drug Act.

Resolutions strongly urging the continuation of franking privileges for vital statistics, communicable diseases returns and morbidity reports, also urging the removable of the embargo and limitations in regard to the importation and sale of salvarsan products were passed. The shortage of candidates for nurse training schools was also deplored, and in a resolution dealing with this a suggestion to provide scholarships for suitable candidates put forward.

Dr. John A. Amyot, C.M.G., Deputy Minister, Department of Health, Canada, presided at these meetings of the Dominion Council of Health.

Dr. M. M. Seymour, Commissioner of Health, Saskatchewan, and Dr. C. J. O. Hastings, Medical Officer of Health, Toronto, attended the recent meetings of the American Public Health Association in San Francisco.

Dr. A. Grant Fleming has taken up his duties as the Medical Officer of Health, Toronto, to which position he was recently elected.

An important conference on Child Welfare was held in the Department of Health, Canada, Ottawa, on October 19th and 20th. The meeting was largely attended, and there was organized at the

meeting the Canadian Child Welfare Council. Mrs. W. E. Todd, of Orillia, was elected President, and Dr. W. J. Tillman, of London, Secretary of the Council.

An important meeting of the Advisory and Consultative Committee of the Canadian Red Cross Society was held in Ottawa on October 21st last. The meeting was well attended and much business transacted. The committee has as its chief function the coordination of efforts of voluntary health promoting agencies in Canada and the establishment of satisfactory relationships between these and the various Health Departments, Federal, Provincial and Municipal.

Courses of Public Health Nursing are now being given in the University of British Columbia, Western University, London, the University of Toronto, McGill University and Dalhousie University. Provincial divisions of the Canadian Red Cross Society are at present providing financial support for all of these departments with the exception of that at Western University, London.

Dr. Hibbert W. Hill has returned to London as Director of the Institute of Public Health and Professor of Public Health in Western University.

Dr. A. J. Doull has resigned as Provincial Medical Inspector in the Department of Public Health, Nova Scotia, and Dr. A. C. Jost has been appointed to succeed him.

Editorial

Diphtheria Deaths

THE PUBLIC HEALTH JOURNAL has for some time past been much concerned because of the apparent general indifference to the question of diphtheria mortality.

Efforts to reduce this mortality must be redoubled, and the education of the laity must be proceeded with at once. Health Departments, physicians, public health nurses, and all those in possession of the facts as to why diphtheria deaths continue, should disseminate them widely.

Only by a great campaign of education can these needless diphtheria deaths be prevented. The article on the subject in this number of the JOURNAL should be widely circulated and the facts therein presented made public property.

The Public Health Journal

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Health Education in Rural Schools

By Jean E. Browne,
Director of School Hygiene, Provincial Department of Education, Saskatchewan.

THE term Health Education is in itself rather significant, indicating as it does the trend of modern opinion. A few years ago, in speaking of health work in the schools, one heard only the term "Medical Inspection." Medical Inspection had its inception in 1879 in Paris, and meant inspection of school children for contagious diseases. Shortly afterwards it was introduced into Germany, and in 1891 we find its beginning in London, England. We find it first in the U. S. A. in the city of Boston in 1894. In 1902, the first school nurse in the United States worked out a very successful experiment in New York City. It is hard to fix the exact date, but about the beginning of the twentieth century medical inspection of schools which before had for its object the reduction of contagious diseases began to take on a broader meaning, and a beginning was made in examining children for physical defects such as defective vision, defective hearing, enlarged tonsils, adenoids, decaying teeth, etc.

But those who were making a study of child welfare soon began to see that inspection work alone would never get us very much farther ahead, and gradually there came to be evolved out of the old idea of Medical Inspection—the idea of Health Education. It includes as one of its phases at the present time the inspection of children for physical defects, but it aims at something infinitely bigger and better, physical perfection. Its aims is the prevention of defects, the removal of which occupied the whole time of the old systems. In a system of Health Education, the self-activity of the child is our starting point. In the old systems of Medical Inspection this well-proven pedagogical principle was scarcely considered. The principle on which Health Education is based, is the essential

principle underlying all education, that is, that the child is an entity, and there is no sharp line of demarcation between the mind and body, and that education means the development of the whole child.

When teachers grasp this fundamental idea, there will be no lack of harmony in connection with health work in the schools. It is largely a matter of getting rid of the old pernicious tradition that a child can be divided into three separate compartments distinctly labeled "Physical, Mental and Spiritual." When we think of the child as a whole, we can then plan for the development of the whole child. It seems to have been due to a lack of understanding of this that in many instances in the past our teachers were trying to devote themselves exclusively to the education of children's minds, while another set of professional people were attempting to look after the same children's bodies. Both of these professional groups have been characterized by narrowness of vision, and in the struggles for their rights, the rights of the child have been largely overlooked. In teachers' conventions you used to hear the invidious comparison made between the respective incomes of the men who merely looked after the needs of the body and those who ministered to the needs of the mind. On the other hand, we frequently hear child welfare discussed in health conventions as if it had only to do with healthy bodies. Recently in a nursing journal I came across this: "The average person would be horrified to find that the teacher who taught his children had no certificate, and yet nothing of employing a wholly untrained or half-trained person for something infinitely more important—their care during a serious illness. I think most of us would hesitate to admit that there is anything "infinitely more important" than the education of a child. As a matter of fact, one of the great weaknesses of the old system of medical inspection was this sharp line of cleavage. The more elaborate the system, the more completely was the responsibility of the child's health taken from the teacher. Obviously this was working from a wrong standpoint, since the education of mind and body are indissolubly linked together. With this principle in mind, let us not take this responsibility from the teacher, but rather let us prepare our teachers to educate the child in his entirety. To be sure, the teacher of yesterday thought it her business to teach the curriculum—no more, but a transformation is taking effect in our schools, and we find the teaching profession are coming to realizez that their business is to understand and direct the lives of their pupils and to realize that education means development of the whole child.

But the teacher must have training along health lines, and so our normal schools will have to commence to give an earnest course in School Hygiene. To be sure our Normal Schools have always had hygiene on their programme, but if the work given in this subject in the largest normal school of Ontario some years ago may be taken as an example, then it might far better have been left off, because it left the idea with the students that hygiene was of no importance. The only lasting impression I have of it was a venerable old gentleman, who was an authority in his specialty in anatomy, exhibiting to the class specimens of the various kinds of bones and joints, and talking to us about a jacketed stove. It isn't likely he had ever been inside a rural school. The course in hygiene should be taught with one aim in view—to teach teachers in training how to conserve the health of their pupils and how to teach health habits. This teacher of hygiene must be a trained teacher and must be thoroughly familiar with the conditions that obtain in our schools, particularly in rural schools. In Saskatchewan, we have on the staff of each of our Normal Schools, a school nurse who has had pedagogical training. She gives lectures in Physiology, Practical School Hygiene, Firt Aid and some Home Nursing. She inspects the students for physical defects and urges on them the necessary treatment. In classes A. B. and C. at the Regina Normal School this year there were 143 students, 117 of whom had remediable defects. Of this number 114 received the necessary treatment. The teachers in training are taught to use a Snellen's Eye Test card, and to roughly test their pupils' hearing by the watch method and the whisper method. They are also taught to detect adenoids and diseased tonsils. They are particularly taught the care of the teeth, and are warned of the importance of preserving sixth-year molars in children. They are taught the symptoms of chores. The teacher who does not recognize the sign of this disease is almost bound to punish unjustly and so to aggravate the disease. They are taught the signs of incipient tuberculosis. I have known of a considerable number of cases of incipient tuberculosis which have been reported by observant teachers before the cough occurred. They are particularly taught the necessity of having hygienic conditions in regard to the lighting, heating, ventilating, desks and seats, cleaning, and toilets of the school. These points that I have mentioned will possibly give you an idea of the kind of work being given in the School Hygiene Course in our Normal Schools. For the older teachers and the teachers who come to us from outside, we have a Health Education course at the Summer School at the University.

This course consists of Physiology, Practical School Hygiene and Physical Culture. It is a great mistake to have School Hygiene and Physical Culture separated. They are both integral parts of Health Education.

I believe that a wise course of study in hygiene taught by teachers who are impressed with the importance of this work this our greatest single instrument in Health Education. Last year, for the first time, hygiene was made a compulsory subject in our province from the time the child entered the elementary school until the end of the third year of the secondary school. During the first two years, however, there is no formal teaching of hygiene. It is a matter entirely of fixing right health habits in pupils. Now it would be ideal if our teachers were so widely read and so well informed as not to require text books at all, but at the present time much depends on the selection of texts. We use a graded series of text books by Ritchie:

For Grades III. and IV.—Primer of Hygiene.
For Grades V. and VI.—Primer of Sanitation.
For Grades VII. and VIII.—Primer of Physiology.

First Year Secondary Schools:

Text—The Saskatchewan Public Health Act—Regulations and Bulletins—Bulletins issued by the National Commission of Conservation.

Such topics as the following are dealth with:

1. How a supply of pure water may be obtained in the locality in which you live. Conservation of rain water.
2. Pure Food Laws.
   Regulations governing the sale of milk for domestic use.
   The part played by flies in the pollution of food.
3. Contagious Diseases.
   Typhoid Fever, Tuberculosis, Measles, German Measles, Whooping Cough, Influenza, Chicken Pox, Small Pox, Scarlet Fever, Diphtheria, Mumps, Trachoma.
   Characteristic features of each and mode of transmission.
   Regulations for isolation and quarantine.
4. Union Hospitals—How Organized.

Second Year.

Text—Human Physiology—Ritchie. Chapters I. to XIII. inclusive.

Third Year.

Text—Human Physiology—Ritchie. Chapters XIV. to XXVI. inclusive. Through teaching of this sort we are building up self-constituted health corps among the older boys and girls. Not long ago a group of High School girls on the playgrounds of a small town school discovered that one of the number had a rash. They went inside and consulted a pasteboard card showing the symptoms, period of incubation and period of isolation of each of the common contagious dieases. One of these cars hangs on the walls of every class room in the province. After consulting the card, the girls decided that their class-mate had chicken-pox. She asked permission to go home. The family physician was called in and corroborated the diagnosis. In a prospectus sent out by the World Book Company, it is stated that four children, after reading the Primer of Hygiene, discovered for themselves that they had adenoids and insisted on their parents taking them to the family physician. In educational work of any kind, our greatest asset is the self-activity of the child, and we shall make a sorry failure of Health Education if we do not make use of this principle. Possibly there may come a time when the teacher, the family physician, specialist-dentist Medical Health Officer and parents will be able to manage the Health Education of the rising generation in rural schools, at any rate, without assistance. But that time has not yet arrived. And so we must provide for special health teachers, a group of people who are specially trained in both hygiene and pedagogy. In Saskatchewan we have school nurses, most of whom have been successful school teachers before taking a nurse's training. They are given a short post-graduate course in our system before being sent into their fields. In New York State they take registered nurses with matriculation standing into the State Normal School and give them a year's course in Pedagogy, School Hygiene, and Physical Culture. They are called Health Teachers. They have the advantage over our School Nurses in one respect at least, in that they are qualified to direct work in physical culture. In the University of Mississippi a special two years' course in Hygiene is given to train teachers to be Health Teachers. These courses have been planned with the idea that health is a matter of education, and that health education is an essential part of education.

The principles of health education are the same whether in rural or urban schools, but the necessity for the rural work is greater. In Saskatchewan 77% of our school population is rural, so that our problem is overwhelmingly rural. In considering this work, we

must also bear in mind the fact that the health standard in rural communities is generally lower than in cities. There are few, if any, organized health activities in rural communities so that if the school shirks its responsibility, the outlook is dismal indeed. Health work in rural schools cannot be copied from cities. A too ambitious programme in rural schools defeats its own ends.

Permit me to outline for you how this problem is being met in Saskatchewan. In April, 1917, the Minister of Education, who is also the Premier of the province, appointed a Director of School Hygiene to organize a provincial school hygiene branch. In connection with this branch there is a gradually increasing staff of specially trained school nurses, most of them with pedagogical training. At present this work is financed entirely by the Government, and the unit of operation is for the most part the inspectorate. The school nurse travels with the Inspector in fine weather in his car, and conducts her inspection work at the same time as the school inspector. This works out without any waste of time for either. Its disadvantage is that it allows the school nurse very little time to visit parents. In winter time, she inspects schools in towns and villages along railway lines. Ultimately this work will have to be undertaken and financed locally, but under our present form of administration, the small school district with its school board of three members, this is an impossibility. We are still hoping for the larger unit of school administration, whether it be the municipality or a still larger unit. In the meantime a considerable number of municipal councils are interesting themselves in this work. At their request, we send one of our School Hygiene staff, and the council arranges and finances her transportation from school to school within the municipality.

The one-room rural school is the pivot round which our system chiefly revolves. Out of 4475 school districts, about 4000 are one-room rural schools,

But it is worse than folly to attempt to teach health in a school that breaks all the laws of hygiene. Children are very quick to detect inconsistencies in grown ups. Our present and very pressing duty then is to put right with as little delay as possible the hygienic conditions of our schools. The first definite piece of work undertaken by the School Hygiene Branch in our province was to send out a questionnaire dealing with hygienic conditions to all the rural and village schools. A bulletin was then prepared based on the replies to this questionnaire. I submitted this to the Deputy Minis-

ter for publication, but it looked almost too bad to print. However, after inserting the following paragraph, it was finally printed:

"In regarding this survey as a whole, we find that it offers immense opportunities for improvement. On the other hand, it compares favourably with conditions as revealed by surveys which have been conducted in the United States. It is altogether probable that it would compare not unfavourably at least with conditions existing in other provinces in Canada, but to the writer's knowledge, no such survey has been conducted elsewhere in the Dominion."

During the three years that have elapsed since this bulletin was prepared, conditions in regard to lighting, heating, ventilating, water supply, washing facilities, general cleanliness, school toilets and desks and seats have been on the whole greatly improved. Our method of attacking the problem was to issue pamphlets on the most neglected phases of School Hygiene, and to conduct school hygiene exhibits at Trustees' conventions. But our most effective means has been the work of the nurses on the Provincial School Hygiene staff. Besides inspecting the pupils in our schools, these nurses make detailed reports on the hygienic conditions of the schools. They send in definite recommendations to the School Boards and they are asked to report a little later what has actually been done. In cases of continued neglect, the school Inspector recommends a discontinuance of the Government grant until the most urgent improvements are made.

I do not think that this phase of health work can be over-estimated since it spells prevention. As a people we are still more concerned with the treatment of disease than with its prevention. How ready a response meets the appeal for the immediate needs of a tuberculosis child but how loath we are to spend money that will prevent hundreds of children from developing the disease. We cannot afford to economize on the hygienic conditions of our schools. I remember about six years ago being home on a vacation in my home town in Ontario just after there had been an inspection of the pupils. There had been a clinic in connection with this work, and a number of children had been operated on for tonsils and adenoids, and a number of them had glasses fitted. All of which was excellent. I marvelled, however, that nothing had been done to improve the school, and I asked if I might see the report that was made to the school board regarding the hygienic conditions of the school. But no such report had been made. And so the old school was left to keep on breeding unhealthful conditions. I think I must take a moment to describe it. It was an old four-roomed frame building

situated on grounds inadequate in size and so low as to be covered with mud except in dry weather. In summer, the grounds were covered with dank weeds. Two of the rooms were lighted on opposide sides of the room, and in all four the amount of window space was grossly inadequate. Two of them had only north lights. The seats were all stationary and double at that. The blackboards were shiny, and opaque window blinds were used! No means were provided for the pupils to wash their hands. Drinking water was supplied in an open pail, beside which rested that old criminal, the common drinking cup. The floors were dirty and the rooms dusty but worst of all were the outside toilets. They were really too offensive for me to describe to you. I have related this to illustrate how short-sighted has been some of the so-called health work carried on in schools.

At the present time, however, the need of inspection for physical defects is great. Our school nurses find throughout our province that 88% of the pupils inspected have physical defects mostly of a remediable nature. One of our greatest difficulties in this connection is the scarcity of dentists in the smaller towns. Although we did not expect intensive results since our work is spread over such large areas, still we find that 2295 rural children had defects remedied last year as the result of notifications sent home by our school nurses. But in undertaking any such work there always remains a considerable number of children whose parents are not able to pay for treatment. The Junior Red Cross in our province has now stepped into the breach and is undertaking the treatment of such children.

Important as inspection work is we must always remember that our aim is Health Education. We believe that there lies ahead of us a golden day when because of the education of all the people, there will be no need of sanitoriums. I have been told that this school work could have no relation to Infant Welfare and pre-natal work. I am not so sure. When girls are taught in school the intelligent care of their own very wonderful bodies and the sacredness of human life, they will not rush into motherhood lightly. There is no end of literature on the care of infants and on pre-natal work, but the difficulty is that expectant mothers do not realize the need of securing it. A good deal of what is distributed finds its way into a waste paper basket. Medical science can do no good in a general way until the people begin to appropriate it themselves. And it is at this point that the Health Education work of our school bridges the gap.

The cure of all the troubles of this restless world is Education and as a part of that great panacea we claim a forward place for Health Education. When this work is firmly established we shall see a glimpse of what St. John saw in the Revelation—"And I saw a new heaven, and a new earth."

The Standard Treatment of Syphilis as Used in the Genito-Urinary Clinic of the Montreal General Hospital

By Frank S. Patch, B.A., M.D., F.A.C.S.
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THE lapse of a decade since the introduction of Salvarsan into anti-syphilitic therapy makes this an opportune moment for reviewing the evolution of the treatment of spyhilis in the last ten years, and if necessary, for revising our methods of treatment.

The outstanding feature of salvarsan is its remarkable therapeutic effect on active syphilitic lesions. It was not surprising to any one who remarked its instantaneous effect on cases intractable to any form of intensive mercurial treatment that the ideal of a therapia steri sans magna (for which Ehrlich was working) should have been considered achieved. This was, however, soon proved to be an illusion, and more continued treatment than the one of two injections originally recommended has been found necessary. Guided by relapses and Wassermann recurrences, there has been a gradual tendency to increase the amount of treatment and to lengthen the period during which it is given. Moreover, while the effect of salvarsan on syphilitic lesion is recognized, the beneficial role of mercury, and to a less extent, of the iodides has been recognized and these drugs are still considered essential in the treatment of syphilis.

As remarked above, there has been a gradual evolution in the routine treatment of syphilis, and the plans outlined vary with every individual spyhilographer. Generally, however, the plans of treatment fall into two classes.

(1) The administration of an intensive course of salvarsan and mercury, and subsequently guidance by the Wassermann reaction as to whether further treatment is to be given.

(2) The continuance of combined treatment with salvarsan and mercury after the intensive course, irrespective of a negative Wassermann reaction, and for a more or less extended period of time, according to the stage of the disease when first treated.

After all, these two types of treatment differ only in degree. Adherents to the first type have been encouraged by the occurrence

of cases of undoubted reinfections denoting clinical cures, and by apparent brilliant clinical and Wassermann cures. Adherents to the second type have been warned by relapses, both clinical and Wassermann, and point to the capricious nature of the disease, alleging that sufficient time has not elapsed to draw too definite conclusions. They argue that there is less danger in over-treating than in under-treating the disease. It is better to forestall relapses in a series of cases by over-treating them all, than to have relapses occur in a number subjected to a less adequate treatment. You all know how difficult it is to forestall the tendency to relapse in any given case, mild cases often showing themselves refactory, and severe cases being comparatively amenable to our therapy. Any scheme of treatment of the disease in any stage must be designed to confine relapses to an irreducible minimum. As a result of the effort to achieve this end, treatment has gradually been lengthened to present proportions.

From the standpoint of a large clinic treating large numbers of cases, it is desirable that standardization of the treatment as far as the disease will permit, be effected. B. C. Corbus, of Chicago, among others, has been active in this direction, and has recently published the standard of treatment used in the Illinois Social Hygiene Dispensary, (Amer. Journal of Syphilis, vol. IV, No. 2, p. 353), one which is highly commendable. White-Martin, Kayes, Hazen and numerous others in recent publications, have advocated standards of varying merit.

The main purpose of this communication is to present the stand gradually evolved by the late Dr. R. P. Campbell, myself and my colleagues, in the Montreal General Hospital, during the last ten years.

All standards of treatment are in unanimity in the matter of giving an intensive course of Salvarsan and mercury as soon as the diagnosis is made. All physicians are agreed that the first course is the important one, and that the chances for a radical cure diminish in proportion to the duration of the disease. It follows too, that the earlier the disease is recognized, the less extensive a treatment is required. The writer feels, however, that the only latitude to be allowed in this direction is in early primary cases with a negative Wassermann; a class of case in which the best results have been obtained, and in which most of our reinfections are to be found.

The writer does not consider it foreign to the subject in hand to digress for a moment to draw attention to the importance of making a diagnosis at the earliest possible moment. Here the

"Spirochaete search" by dark field illumination is absolutely essential, and no substitute can be recognized as filling its place. Moreover, the importance of regarding every penile or vulval sore as suspected syphilis cannot be too strongly urged. The habit of cauterizing, with percipitate haste, a typically chancroidal ulceration cannot be too sufficiently condemned. Too often such a sore harbors the Treponema pallidum, and if secondary symptoms are slight and evanescent, there is grave danger of a diagnosis being delayed till late in the disease. In one case coming recently under the writer's observation, a supposedly innocent penile sore had been cauterized twenty-nine years previously by a physician. The real nature of the sore was not revealed until on the patient's complaint of weakness of the bladder, a tabes dorsalis was diagnosed. . The practice in the writer's clinic in the Montreal General Hospital is to suspect every sore of being syphilic until it is definitely proven not to be.

Before any local treatment is carried out, Spirochaete searches are made, and only after repeated negative examination is local treatment instituted. Even then, and in spite of a clinical diagnosis of soft sore, the patient is kept under observation for two or three months, in order to detect the onset of secondary symptoms or a positive Wassermann reaction. Serious efforts are continually made to educate patients to the importance of this matter, by means of printed forms and verbal instruction. The applying of antiseptic ointments, powders and washes locally before a spirochaete is made is likewise to be strongly insisted upon.

The schedule of treatment submitted herewith is not to be slavishly followed. Particularly in the later stages of the disease and in the cerebro-spinal syphilis, individual needs have to be considered and variations made. In all cases, due attention is to be given the general hygiene of the patient, and his body weight and urine carefully watched. It is pointed out that primary syphilis with a positive Wassermann recation is treated exactly the same as a florid secondary. In both cases the syphilitic virus is disseminated throughout the body, and almost as severe a treatment is required, for practical purposes the same amount.

The schedule is to be regarded as particularly elastic as regards the treatment of cerebro-spinal syphilis, and while it is felt adequate for ordinary dispensary treatment, yet many cases require more intensive intraspinous treatment after the Swift-Ellis method, and its modifications. This, however, is not given in the dispensary. Lumbar punctures are done in the dispensary for diagnosis and follow-

ing intravenous medication, precautions being taken not to draw off more than 5-10 c.c. and patients being required to remain in the recumbent position for a brief period following the puncture.

Where the terms Salvarsan or Arsphenamine are used, they are used in a general way for the original Salvarsan and its various national substitutes. The writer regards various ree-compounds as being less toxic, but on the whole less potent in therapeutic effect. Their use is reserved for cases where the stronger compound is not well borne. They may be given more frequently in proportionally larger doses, and in more concentrated solutions.

SCHEDULE OF ANTI-SYPHILITIC TREATMENT, GENITO-URINARY CLINIC, MONTREAL GENERAL HOSPITAL

(1) *Intensive Course*—Consists of six intravenous injections of Arsphenamine and nine intra-muscular injections of mercury, either in the form of grey oil or salicylate of mercury, one dose weekly.

Arsphenamine is given in the 1, 3, 6, 9, 12 and 15th weeks of treatment is given in the intervening weeks.

(2) *Medium Course*—Consists of four intravenous injections of Arsphenamine and eight intra-muscular injections of mercury, one dose weekly.

Arsphenamine is given in the 1, 3, 7 and 12th weeks of treatment. Mercury is given in the intervening weeks.

(3) *Ordinary Course*—Consists of two intravenous injections of Arsphenamine and eight intra-muscular injections of mercury.

Arsphenamine is given in the 1st and 10th weeks of treatment. Mercury is given in the intervening weeks.

Dosage—Arsphenamine: 0.1 per 30 lbs. body weight.

CLASSIFICATION:

Standard Technique No. 1:

Primary Syphilis—Treponema pallidum positive;
Blood Wassermann negative;

Standard Technique No. 2:

Primary Syphilis—Treponema pallidum positive;
Blood Wassermann positive;

Secondary Syphilis—Generalized eruption;
Blood Wassermann positive;

Standard Technique No. 3:

Late Secondary Syphilis—Spinal fluid Wassermann negative.
Blood Wassermann positive;

Tertiary Syphilis—Lesions of the skin, bone, mucous membranes and vascular system;
Blood Wassermann positive;
Spinal fluid Wassermann positive or negative.

In case of latent syphilis, i.e., uncured cases without symptoms, blood Wassermann positive or negative; spinal fluid Wassermann negative, consideration is to be given the age of disease and amount of treatment previously administered, and case classified under Standard Technique two or three;

Standard Technique No. 1:
Intensive course—rest 6 weeks;
Medium course—rest 6 weeks;
Ordinary course—rest 6 weeks;
Take blood Wassermann and make Lumbar Puncture.
If blood Wassermann positive, treat as latent syphilis;
If spinal fluid Wassermann positive, treat as nerve syphilis;
If both negative, discontinue treatment.
Discharge Technique: Negative blood Wassermann every four months for one year after treatment is stopped;

Standard Technique No. 2:
Intensive course—rest six weeks;
Medium course—rest 6 weeks;
Ordinary course—rest 6 weeks;
If blood Wassermann positive, treat as latent syphilis;
If spinal fluid Wassermann positive, treat as nerve syphilis;
If blood Wassermann negative, alternate periods of eight weeks' treatment with mercury injections and resting.
Four courses in all;
Take blood and spinal fluid Wassermann.
If blood Wassermann positive treat as latent syphilis;
If spinal fluid Wassermann positive, treat as nerve syphilis;
If blood Wassermann negative, treat with alternate periods of eight weeks' treatment with mercurial injections and resting.
Four courses in all.
Take blood and spinal fluid Wassermann.
If blood Wassermann positive treat as latent syphilis;
If spinal fluid Wassermann positive, treat as nerve syphilis;
If blood Wassermann negative, discontinue treatment.

Discharge technique; Negative blood Wassermann every four months for two years after treatment is stopped.

Standard Technique No. 3:

Intensive course—rest period with Potassium Iodide, 50 grains a day, 6 weeks;

Medium course—rest period with Potassium Iodide, 50 grains a day, 6 weeks.

Ordinary course—rest period with Potassium Iodide, 50 grains a day, 6 weeks.

Take blood and spinal fluid Wassermann.

If blood Wassermann positive, treat as latent syphilis;

If spinal fluid Wassermann positive treat as nerve syphilis;

If blood Wassermann negative, four alternate periods of eight weeks' treatment with mercurial injections and resting with Potassium Iodide, 50 grains a day.

Take blood and spinal fluid Wassermann.

If blood Wassermann positive treat as latent syphilis;

If spinal fluid Wassermann positive treat as nerve syphilis;

If blood Wassermann negative, discontinue treatment.

Discharge Technique: Negative Wassermann every four months for two years after treatment is stopped.

Standard Technique No. 4:

Arsphenamine once weekly for four doses. At the end of this course do lumbar puncture.

Mercurial injections once weekly for eight doses.

Arsphenamine once weekly for four doses. At the end of this course do lumbar puncture.

Repeat this course until spinal fluid Wassermann is negative, and for one year after, notwithstanding negative blood and spinal fluid Wassermann.

Discharge Technique: Negative blood and spinal fluid Wassermann every year for three years after treatment has stopped.

If at any time spinal fluid Wassermann becomes positive, recommence treatment.

When Typhus Raged in Canada

By Ruggles George, B.A., M.B., *Canadian Red Cross Society.*

THE present epidemic of typhus fever in Europe awakens our sympathy and calls insistently for the aid of all humane peoples. The average Canadian feels so secure behind his barrier of sanitation and hygiene that the danger of typhus fever in Canada awakens only a vague interest. To Canadians, typhus fever should be of historic interest for it is but a life-time since this dread disease scourged Canada's immigrants in the same unsparing way as it is now doing in many districts of Europe.

The Canadian epidemic of 1847, like many other troubles before and since, had its origin in Ireland and was transferred to Canada by immigrants whose deplorable condition and filthy surroundings made a fertile soil for the development of the disease. For many years in this period there was always a certain amount of typhus among the Irish immigrants. In 1846, for instance, there were some 600 cases—quite a usual figure. The following year the number arose to well over 20,000, with over 8,000 deaths.

These figures seem insignificant to us whose appreciation of death rates has been revolutionized by the tolls exacted by the World War and the pandemic of influenza. Be it remembered that they represent catastrophies of proportionate magnitude. Remember rather that of the Irish immigrants over one in four took the disease, which had a mortality of from 20% to 40%. A contemporary writer assumed 20% as "a fair average mortality under favourable conditions of treatment."

The reason for the unusual incidence of typhus in 1847 was the almost total failure of the potato crop of the two previous years; causing a scarcity that almost amounted to famine in some districts. These hard times trebled in a single year the number of Irish emigrants to Canada.

The conditions of life on the emigrant ships are so horrible and loathesome as to beggar description. The physical weakness of a semi-starved people added to the squalor of the foul surroundings in the steerages of sailing vessels give a picture of destitution that rivals even the horrors of the typhus ridden districts in Europe today. A contemporary observer describes these conditions as follows:—

"In addition to the usual dampness of a ship, you have in an emigrant vessel the humidity caused by the daily distribution of fresh water in small quantities to each individual passenger, and which, being kept by them in tins and pots in and under their sleeping berths, gets capsized very often by the rolling of the ship, and thus adds to the general dampness; and, in ill regulated vessels, the passengers are permitted to wash their clothes in the 'tween decks. The air of the hold is thus always surcharged with moisture, while its temperature is kept up by the heat given off by an accumulation of living bodies.

"The supply of food is in many cases limited to a pound of breadstuffs, or oatmeal, to each adult per diem, and this often in a mouldy and damaged state. Thousands of the emigrants who arrived in Canada last season had no other sustenance on the voyage.

"The peculiar nature of a ship's hold is such, that ventilation, while the ship is under weigh, is all but impossible in the only way in which perfect ventilation can be obtained, namely, by passing a current of pure air through the hold. Wind-sails effect this in a very insufficient manner; and when, in rough weather, it becomes necessary to fasten down the hatches, the little supply of air which enters by them is shut out. Of the passengers a great proportion are women and children, who are unable, in many instances when the weather is stormy, to avail themselves of the miserable 'cabinets d'aisances' (as when these do exist, they are generally placed in the bows of the ship), and are consequently obliged to pass their evacuations in the hold. You have here combined all that could by any possibility generate a foul atmosphere; and when to this you have febrile miasma, the only wonder is that any escape the disease, as there is no running away from it. On visiting a passenger vessel, such as thus described, on a morning before the emigrants have come on deck, I have seen a stream of foul air issuing from the hatches as dense and palpable as seen on a foggy day from a dung-heap or range of hot-beds; and rarely did I find it necessary to inquire if fever prevailed on board; that peculiar and characteristic odour which belongs to typhus fever patients was perceptible to the senses on stepping on the deck. To the foregoing causes ought to be added the moral and depressing influence of fear of shipwreck, and grief at leaving their native land—both powerfully predisposing causes of fever."

An example, not an extreme one, is that of the ship "Looshauk," from Liverpool to Quebec:—

Steerage passengers (on leaving Liverpool)	349
Cases of typhus	299
Deaths from typhus	117

This table shows that 86% contracted typhus, and of these nearly 40% died.

The hospitals near Quebec and Montreal were swamped with patients. The Grosse Ile Hospital admitted 2,200 cases in six weeks, and a Montreal hospital 1,400 in a fortnight. The hospital mortality was 20% or over, though these hospitals offered comparatively favourable conditions of treatment.

The medical literature of the period reveals a controversy as to the cause and spread of the epidemic—a controversy that raged only less intensely than did the epidemic itself. Wise men argued as to whether typhus was "infectious" or "contagious"; though all agreed that it was communicable. The more ardent and advanced spirits bandied Latin quotations interspersed with such magnificent phrases as "animal effluvium" and "noxious miasma." There were even six synonyms for typhus fever, namely:—

1. Jail fever,
2. Camp fever,
3. Hospital fever,
4. Ship fever,
5. Road fever,
6. Irish fever.

This indicates the emphasis laid by the medical opinion of the day on environment as the causation of the disease.

Meanwhile the louse did its work unheeded by science. This vulgar creature could not engross scientific interest whilst there was noble sport to be had with "noxious miasmata" and "effluvia." The lowly louse was considered only as the inevitable companion to the poor Irish immigrant, who needed education in public health just as much as the modern European peasant who resents being deprived of these little parasites—"Am I a weakling that I cannot sustain a few lice? They are a sign of strength!"

The horrible conditions which existed in Canada 73 years ago are present in Europe to-day. The typhus fever which once devasted our own country is now sweeping with even greater violence across Europe. Happily there is this difference between the epidemic in Canada in 1847 and the present epidemic in Europe. In the Canadian epidemic it was not known how to control typhus. To-day the methods to prevent the spread of typhus are well known and established. They are proved, tried and practical, beyond question

or doubt. The theoretical stage has passed. Typhus fever can be stamped out of Europe as soon as the more fortunate nations aid in this great humanitarian work. The people of Canada are being given an opportunity through the British Empire War Relief Fund, to help these stricken folk.

Lest the foregoing be thought cynical and contemptuous of the earnest effort and thought of that period, the following quotation from an editorial in the British American Journal of Medical and Physical Science of July 1847 shows a point of view worthy of the most modern and progressive public health official, for only to-day are we realizing how true it is that "public health" is "public wealth":

Public Health Is Public Wealth

"We do not wish to be considered as alarmists nor are we writing for the purpose of engendering any unnecessary or groundless apprehensions. The disease is an eminently contagious one and the records of private practice, both in this city and Quebec proclaim its steady progress among the inhabitants. To be forewarned is to be forearmed. Let the strictest cleanliness prevail everywhere. Let the Boards of Health be active and energetic in all their duties and let the civic authorities pay immediate attention to their reports and carry out their suggestions with vigorous determination, laying all pecuniary considerations aside. Public health is public wealth. By paying due regard to the former the latter is certain to follow, and the funds of the city are much better employed and will produce a greater and more satisfactory return by the mode indicated than by all the embellishments which the same amount of money might command. We think that the immigrants, under existing circumstances, should be debarred all communication with the citizens."

The Physician and Public Health Work

DR. ROBT. E. WODEHOUSE, O.B.E.,
Ontario Provincial District M.O.H.

Read before the Huron County Medical Society, Sept. 17, 1920.

MY first desire in requesting the privilege of a *Health* or *State Medicine* meeting of your society, was that I might come in contact with all the members of the *Medical Profession* in this section of the *Provincial Health District Number Two.* The second reason was that it is desirable to place before you our aims and methods, to request your frank criticism and if desirable, to modify our procedure to such a degree as to enlist your hearty co-operation and sympathy.

It is not new to you, that success in *Public Health* undertakings, is entirely dependant upon the approval of the Profession, the active co-operation in *Spirit, Word* and *Deed.* You must be loyal to us or we fail. This necessitates two things. First, a sane programme of activities on our part, such as will solicit your generous approval; and second, a modern knowledge, on your part, obtained only by reading the literature of the day—bearing upon the Science and Practice of *Preventative Medicine,* in order that you can appreciate our methods, aims and probable results of our conjoined efforts.

The member of our Profession who happens to be the local legal director of the *Public Health Legislation . . . Dominion, Provincial* and *Municipal,* and who nominally should be the main moving spirit of all Official and non-Official movements for the betterment of the *Public Health,*—occupies a very important and responsible position in your community.

In the past, and in some cases still, the position is occupied by "would be" Political creditors of the locality,—in others, by some member of the Profession deemed to be in need of the remuneration, but otherwise disinterested. Finally, in a few cases, it is occupied by a man whom the council feel they can rely upon to protect their sacred *Mill Rate,* as closely as the law will permit.

There is not one of these who would not be entirely satisfactory, if he would only be his own conscientious medical self. Every man who has graduated in our *Science* of *Medicine,* has inborn in him a sympathy for and a desire to help in every way to elevate both mental and physical ills and to improve the race to the utmost.

If the enthusiasm could be instilled into him, which some of us experience in spells, and if it could be his lot once to put over a real *Health* programme or undertaking, he never again would have any trouble convincing himself that *Preventative Medicine* is not a sinicure; that its workers are not freaks simply making useless activities for their own employment, and that all the thought, work and necessary expense are warranted, nor would he have any trouble getting all the support that he desired from his professional Confreres and the Public. Nothing convinces others like the evidence in you of self conviction.

Health work of to-day is not the old time official occupation of a municipal appointment required of the *Municipality* by law, and therefore a necessary evil. To-day a *Health Officer* should, in large as well as small communities, direct all movements and undertakings in the interest of the betterment of the *Health* of its citizens.

First.—He should be paid sufficiently to place him under an obligation to the community to keep himself abreast of the literature and practice of the modern science of to-day. He should be an energetic enthusiast in the commonsense enforcement of all measures known to be contributing factors to the betterment of the *Public Health.* He should, at least, receive 10c a head population per year, and more as the people show their approval of Active Health Practice, by granting annually more municipal funds for its execution.

Second.—He should be methodic: A, keeping himself at least monthly informed, by personal inspection, of the Clerks' Registry of *Births* and *Deaths,*—in order to detect any evidence of undue incidence of *Preventable Diseases;* B, *Keeping* a registry and spot map of the type and locality of all preventable diseases; C, Keeping on file of questioners, filled out by his Sanitary Inspector at his visit, to placard all infectious cases, or for instruction, quarantine or disinfection. The questioner should show the type of disease, age and sex of patient, earning capacity, age and sex of the contacts living in the same house, eating in the same house and working in the same place of business. The source of infection—laboratory findings, if any, whether removed to hospital for treatment, mode of infection and if a carrier, name address and treatment of carrier; D, keeping on file questioner of enquiry into reported nuisances—and stated findings of Sanitary Inspector; E, file showing food inspection reports of the Sanitary Inspector covering preparatory and vending plants—results of any examinations made of foods and clinical specimens; F, records of visits by *Health Nurse* to New

Born Babies, visits to expectant mothers at the request of their physician, visits to the homes in which members have died from Tuberculosis, lists of lectures and demonstrations put on by the Health Nurse or M.O.H.

The result would be an organization evident to any citizen,—efficiency which would impress the governing bodies,—and records which would convince any investigating committee of the efforts being put forth and which would satisfy any county Judge to the extent of his awarding, under section 39 of the *Health Act*, at least 10c a head a year, and in every case so far applied for,—award has exceeded the amount requested.

In conclusion, it may be well to refer to the effect upon the Practice of Medicine of an intensive Public Health Activity in a community.

1st. It reduces sickness and death. It therefore deprives the physician of 70% to 80% of his Typhoid Fever cases and proportionately of the other Infections whose incidence reacts to the campaign.

2nd. The high cost of living has caused a higher wage to be paid and a resulting higher standard of living. The public do not want to be sick. The bread winners cannot afford to have sickness to finance. They are therefore, as a result of education, their own common sense and of necessity, now anxious to prevent every possible day's illness in their household. They want to know how and when to prevent this, and this is what happens in actual practice. The theory stage was passed long since.

The *Health Workers* visit the home, watch the progress of the Pregnant mother, send her to her Physician early and as often as the circumstances require. This is increased practice, safe practice for the mother and child, and efficient and successful practice for the Physician. The father willingly contemplates additional outlay in return for a healthy living mother and child.

The Health Workers follow up the child and insist upon a consultation by the mother with her physician, in regard to the child's lack of progress,—alteration of diet, removal of Adenoids or Tonsils, early treatment of Otitis Media, etc., more practice which results in good both for the Bread Winner and the Physician.

The *Health Workers* gain the confidence of the members of the household containing a sufferer from Tuberculosis, or having lost a member from this same ailment,—the contacts are weighed and watched and at the first evidence of decline, as before, are brought

in contact with their physician for early and constant medical supervision. This also applies to the household containing individuals infected with Syphilis,—repeated miscarriages, on the part of the mother, and other evidences warranting the nurse using her utmost persuasive ability to get the inmates to visit their physician and submt to the *Wasserman* test and necessary treatment,—as also applies in *Gonorrhoeal* infections in women and children,—often remaining away from the only source of treatment, their physician, owing to their lack of knowledge or appreciation of the presence of an ailment requiring immediate treatment.

Every agent of *Public Health* works through the Physician, with and only with his approval and always to the common advantage of *Patient, Physician* and the *Community Welfare.*

A Plan for a More Effective Federal and State Health Administration

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(*Continued from the November issue.*)

The Duty of the Nation in Relation to Health and Physical Well-being

In the inspiring words of the late William Edward Hartpole Lecky,

> "To raise the level of national health is one of the surest ways of raising the level of national happiness, and in estimating the value of different pleasures, many which, considered in themselves, might appear to rank low upon the scale, will rank high, if in additi n to the immediate and transient enjoyment they procure, they contribute to form a strong and healthy body. No branch of legislation is more really valuable than that which is occupied with the health of the people, whether it takes the form of encouraging the means by which remedies may be discovered and diffused, or of extirpating by combined efforts particular diseases, or of securing that the mass of labour in the community should, as far as possible, be carried on under sound sanitary conditions."

The achievement of this ideal demands a decidedly more effective health administration, attainable only, however, upon new and broader conceptions, scientific as well as practical, than those which underlie our Federal and State health organizations of to-day.

The foregoing observations and conclusions are briefly restated in the following recommendations for a plan of action urgently called for by the highest considerations of national and State welfare.

First. The President of the United States should be prevailed upon to appoint a select committee of experts on sanitation and public health to prepare a plan for a Federal Health Administration inclusive of all the health interests and health promoting activities of the Government, to replace the existing Public Health Service, the inadequacy and restricted function of which are clearly recognized by all who are thoroughly familiar with the facts.

Second. The committee should have power to associate with itself in an advisory capacity experts recommended by national health organizations and health promoting activities directly interested in and

thoroughly familiar with the facts and considerations involved in the proposed plan of a Federal Health Administration.

Third. A sufficient appropriation should be made available to the committee for general expenses and the technical inquiries called for in its judgment in the furtherance of its plans. The members of the committee, however, should serve without compensation, but they should be reimbursed for their traveling and secretarial expenses.

Fourth. The work of the committee should in broad outlines be subject to instructions from the President prepared by the Surgeon-General of the U.S. Public Health Service, the Surgeon-General of the Army and the Surgeon-General of the Navy, separately or jointly, as the President may deem advisable. The committee, however, should also from the outset act in thorough co-operation with the American Public Health Association, the National Conference of State and Territorial Boards of Health, the American Medical Association, and all other health promoting public activities willing to assist by expert counsel in the working out of the details of the proposed plan of a Federal Health Administration.

Fifth. Aside from the general instructions concerned chiefly with questions and problems of an administrative nature, the committee should concern itself with the practical feasibility of the inclusion in a new plan of Federal Health Administration of (*a*) the systematic physical examination and medical supervision of children and young persons below the age of majority, (*b*) the systematic collection, tabulation and analysis of the sickness data derived from general medical practice and institutional experience, (*c*) the establishment of a limited or restricted State Medical Service, free from every taint of poor-relief or the recognized disadvantages of poor-law administration. The inclusion of the foregoing three principles would necessarily be largely limited to a reorganized system of State Health Administration based in all essentials upon a model Federal law.*

*Of special value in this connection is the plan of organization of the U.S. Public Health Service, issued in 1915. The plan is slightly out of date, but useful for the purpose of emphasizing the numerous functions and subdivisions of the service as carried on at the present time. Of exceptional importance for the present purpose are "Some Notes on Medical Education in England", by Sir George Newman, Chief Medical Officer of the Board of Education and Medical Assessor of the Universities Branch of the Board, issued as a Parliamentary Paper in 1918. This publication emphasizes the functions of the medical practitioner and the changed conditions of medical practice. It contains a discussion in detail of the modern requirements in medical education and concludes with observations on preventive medicine, the place of research in medical schools and the study of medicine after graduation. Particularly suggestive is the statement that "both the science and art of medicine suffer from the embarrassment of ever growing and expanding themes, and of the infinite number and variety of idiosyncrasies, heredities, and circumstances governing health and disease in the individual".

Sixth. The committee should inquire into and report upon the extremely important question of adequate Federal financial aid in support of local sanitary activities possibly inclusive of associated health promoting activities more or less in conformity to the basic principles of the States Relations Service applicable to agricultural education, interstate highway construction, etc.

Seventh. The committee should report upon the more or less involved legal aspects of the proposed Federal Health Administration and the implied possibilities of conflict of Federal and State authorities. In the event that the committee should deem it necessary it should be at liberty to recommend the adoption of a Constitutional amendment under which the required powers in matters of health and physical welfare would be granted to the Federal Government, possibly to be concurrently exercised under both Federal and State jurisdiction.

Eighth. If approved by the President the recommendations of the committee, with their report and exhibits, should be transmitted to the Senate Committee on Health and National Quarantine for the purpose of a public hearing and a full opportunity for a public consideration o f every question involved in a measure than which no legislation of recent times is more likely to affect so vitally the present and future welfare of the American people.

APPENDIX B

The Use of National Parks and Healing Waters for Health and Recreational Purposes

As yet only a beginning has been made in the use of national parks for health and recreational purposes. With few exceptions, the Federal Government has taken no active interest in the development of the medicinal springs of this country and the conservation of the country adjacent thereto. The sciences of climatotherapy and balneotherapy, which have been developed to so high a degree of perfection in England and on the Continent, can hardly be said as yet to exist in this country. There is an abundance of descriptive accounts of mineral waters, health resorts (spas) for Europe, Egypt and other countries of the world, but though the United States abounds in mineral springs of great therapeutic and other value, the literature on the subject is fragmentary and largely unsatisfactory. A treatise on "Climatology, Health Resorts and Mineral Springs" by F. Parks Weber, included in Cohen's "System of Physiologic Therapeutics", is, in the main, concerned almost exclusively with European and other foreign localities. As a notable exception to our general neglect of this important subject, reference may be made to a

report on the mineral springs of California by Gerald A. Waring, issued by the U.S. Geological Survey in 1915. It should, therefore, not be impracticable for the survey to make the facts of an exceedingly important branch of medicine more generally accessible than is at present the case.

The most encouraging evidence of progress in the direction of a broad-minded public interest in the proper utilization of natural parks and medicinal springs for health and recreative purposes is to be found in the acquisition of the Saratoga Springs Reservation by the State of New York in the year 1909. This reservation includes four hundred acres of land, one hundred and forty mineral springs, with a daily flow of one hundred thousand gallons, which, if properly utilized, would, it is estimated, yield to the State an annual income of $730,000 and a net profit of nearly $550,000. The reservation maintains in operation three bath-houses, but no statistics are available as regards attendance, etc. The springs are under medical supervision, and while the scientific control and management of the property do not conform to European standards, the tendency at least may be said to be in that direction. The Saratoga waters are of particualr value in gastro-intestinal disorders, gout, rheumatism, arthritis, anemia and obesity. The mineral springs supplying drinking-waters are included in four principal classes: laxative or cathartic waters, alkaline-saline waters (with alkalinity comparatively predominating), chalybeate (or iron) waters, and table-waters. All are naturally and highly carbonated as they flow from the springs. It is pointed out in an official report on the springs that

> Saratoga holds no cure-all. But for certain diseases and for certain functional disturbances fostered by the pace of our modern, high-pressure civilization, its springs do indeed run with an elixir of life, and hold as much of the power of rejuvenation as any fountain of youth yet discovered. In their more extensive development no false or extravagant claims must be made for them. They need no such exploitation. But in a thoroughly broad-minded and ethical spirit the boons that they offer must be made increasingly available to the entire public in their pure and unchanged natural condition.

The most thoroughly developed mineral springs under the control of the United States Government are those of the Hot Springs of Arkansas, regarding which annual reports have been made public for a number of years. The Hot Springs Reservation during the fiscal year 1916 provided 544,371 paid baths in the general bath-houses, providing an income of $243,568. In addition to the number of paid baths, 2,243 complimentary baths were provided in the pay bath-houses, and 103,398 baths at the Government free bath-house, including others, a total of 654,296 baths in the fiscal year. The reservation was acquired by the

Government in 1832 and has an area of 911 acres, consisting of five units, namely, Hot Springs, North, West and Sugar Loaf Mountains and Wittington Lake Reserve Park. Hot waters, however, issue only from the west slope and from Hot Springs Mountain, with an average daily flow of 848,000 gallons and an average temperature of 135° F., and are confined within an area of approximately 500 by 1,400 ft. Admirable reports, including scientific observations of much value, are published annually regarding the reservation, including with others observations on the radio-activity of the waters, the Oertel system of mountain-climbing, etc. A scientific report on the analysis of the waters of the Hot Springs Reservation, including a geological sketch by Walter H. Weed, was published by the U.S. Geological Survey in 1902.

There are, therefore, two leading precedents for the broadening of Government activity in this most important field of modern medicine. The Arkansas Hot Springs Reservation, on the part of the Federal Government, and the Saratoga Springs Reservation, on the part of the State of New York, are the most conspicuous illustrations of what may be achieved at moderate expense under proper Government control and supervision. Conversely, these two illustrations emphasize the conspicuous neglect of the Government of countless other opportunities for the development of our mineral springs, which nowhere perhaps are more urgently in need of an active State and Federal interest than in California. It is not, however, merely in the direction of the proper use of mineral springs that the Federal Government can materially assist the cause of public health advancement, both individually and collectively considered. No country in the world has gone further in the acquisition of national parks than the United States, and during recent years special efforts have been made on the part of the Government to increase the public utility of these parks and playgrounds, in the direction of making them more accessible to the large majority of the public. It is becoming recognized to an increasing extent that the use of these parks for health and recreational purposes far exceeds their value to the nation as mere attractions from an artistic or scenic point of view.

Properly considered, our national parks could be made to render most important services in the furtherance of the cause of national health. They are an immense asset to the nation and should be preserved unimpaired for future generations. By liberalizing the rules and regulations concerning these parks and by providing at moderate cost for food and shelter, the Government could at an inconsiderable expense render material assistance to the cause of good health, as emphasized in life and activity out-of-doors. Every practical feature of broadening the functions of national parks to public health purposes is emphasized

in the Proceedings of the National Parks Conferences, of which five or six have thus far been held. It is sincerely to be hoped, however, that in the future questions of health will receive more consideration than heretofore, although in the nature of the subject, the recreational features of the use of the parks, etc., are rightfully entitled to priority.

The importance of rest and recreation is being better appreciated at the present time, although even as yet the necessity of periodical and prolonged vacations is hardly admitted on the part of the mass of our wage-earning population. The time, however, cannot be far distant when wage-earners will be given vacations in precisely the same manner as is now the case almost invariably with those that are paid on a salary basis. The utilization of leisure time for health promoting purposes will in the future become a matter of profound interest and national importance. The development of such agencies as the Boy Scout movement, etc., must necessarily tend largely in the direction of encouraging out-door sports and out-door activities. The time has passed when the Government could view these matters with indifference; quite to the contrary, the duty is now recognized for an active Government interest, as best illustrated in the proper use of national parks, playgrounds, etc., as well as mineral springs. The possibilities for Government action in these directions have not as yet been realized, except in a very moderate degree. The future, however, is full of promise, providing an active educational campaign succeeds in keeping the facts before the public. There can be no question but that the neglect of the proper use of mineral springs is one of the most lamentable evidences of apathy in the larger field of preventive medicine or medicine as a healing art.

The All-America Conference

THE All America Conference on venereal diseases and social hygiene, held in Washington last week, was the first gun in a world war, the call to which was sounded by women before the International Health Conference at Cannes, France, in April, 1919. The delegates, who represented the five allies who fought the great war, called for regional conferences to take up the work; and of these the meeting in this city was the first.

The second will be held next May at Copenhagen, Denmark, and will be attended by representatives of all the Scandinavian nations, and by Holland and Great Britain. Later conferences will probably be held in 1921 at Paris and at London, and one or both of these will be attended by delegates from Germany, which before the war did much against the twin diseases.

The meeting in Washington was generally agreed by all who attended its sessions to be one of the most remarkable medico-sociological gatherings ever held in the United States. This was probably a result of the plan on which the conference was organized and carried on; for this differed markedly from that of the usual medical convention. No set papers such as commonly occupy most of the time were read; and the few set speeches that were prepared were almost completely done away with by unanimous consent.

The work was directed by the General Conference Committee, originally planned to number fifty, but later expanded to more than one hundred, selected from the four hundred and odd delegates by Dr. Wm. H. Welch, president of the conference. The effort, largely realized, was to gather in this committee those who, by their studies, experience, and other attainments and by their relations to other official and non-official bodies, could speak with authority on the many phases of the work. Its membership included clinicians, pathologists, sociologists, syphilographers, gynecologists, social workers, psychiatrists, and others.

Split into twelve sub-committees, each of which had a special group of problems to consider, the committee worked long and hard. The problems were presented to them in the form of questions which had previously been prepared by the administrative committee. One by one the answers were worked out, often after long effort which harmonized views that at first appeared to be divergent.

Lunch time brought rest, but no escape for the members of the conference committee. The organization did not permit them to

scatter but took them for automobile rides to points of interest and then brought them back to the hotel in time for lunch, immediately after which came the hour for reassembling. The result was that the afternoon sessions began promptly with a full attendance. Some delegates remarked plaintively that they had never worked so hard in all their lives, "but" they added, "your methods of organization most assuredly do get fine results."

The committee resolved itself into a committee of the whole for the afternoon sessions and discussed seriatim the reports that had been reached by the twelve small groups in the mornings. Naturally many of these reports were warmly debated, for the view points of the different classes of the membership were very different. The medical and the psychological men, for instance, often disagreed at first, only to find cause later to modify their ex-parte ideas considerably in the light of those advanced by the others. And so also of other groups and members. The results of such debates often proved to be invaluable.

While the morning and afternoon committee meetings were going on, the remaining delegates, some 300 in number, assembled in the auditorium of the U. S. National Museum to listen to set papers; but, after the second day these were reduced by common consent to a minimum and in their place were taken up matters raised by the delegates themselves. Many such debates resulted in the formulation of new questions for submission to the general conference committee.

In the evenings the delegates met again and received the findings of the general conference committee, many of which were warmly debated. Members of the committee were on hand to defend their action, but not a few resolutions were referred back to them for further consideration, which ultimately resulted in harmonious agreement and invariably in considerable improvement.

The resolutions reached by the conference are not yet available. They were submitted to the delegates and passed upon as they were reached by the conference committee and not in the order propounded; and they can be presented to the profession only after considerable editorioal labour. The work has already been begun and will be pushed to early completion.

The general form of the manner in which some of the questions have been answered is shown by the following resolutions adopted by the conference.

In reply to a question as to the establishment of immunity to gonorrhoea and syphilis, the committee pesented the following reso-

lution: "With reference to gonorrhoea, there is no evidence of the establishment of any immunity to disease beyond that of a more or less temporary immunity in the case of existing, individual infections. Such a temporary relative immunity may be lost either as the result of disturbed relations between the infecting organism and the host or through the introduction of a new gonorrhoeal infection.

"With reference to syphilis, there is no evidence of an absolute and permanent immunity to syphilis unless it be that due to an existent infection. There is evidence to show that infection may exist without obvious manifestations of the disease. The immunity ensuing in such an infection may extend even to the degree of a commensal or symbiotic adaption."

With respect to the use of the Wassermann reaction among other things, it was resolved that: "The blood Wassermann reaction should not be used as a sole guide to the duration of a syphilitic infection. The blood Wassermann reaction should not be used as the sole evidence of the effectiveness of a particular drug or method of treatment. The blood Wassermann reaction should not be used as the sole evidence of 'cure' no matter how many times repeated."

Of interest to laboratory workers and clinicians is the resolution that: "The complement fixation test has not yet been shown to be of value in the diagnosis of doubtful cases of gonorrhoea. It is possible, however, that the precipitin test recently reported by Meader and Robinson may be of great value."

The Committee enumerated some of the advantages of having venereal disease clinics operated in conjunction with other clinics and pointed out that such a plan promotes recognition by the public that venereal diseases are being dealt with exactly like other diseases. It also pointed out that under this plan, the treatment of venereal diseases in the same institution with other diseases promises a better understanding on the part of young physicians, especially among interns and medical students regarding the importance of these diseases and of the true relation established between them and other pathological conditions.

In promoting education with respect to the venereal diseases, it was resolved that: "Fear should not be deliberately stressed as a deterrent. The element of fear should appear only to the extent that it is inherent in the presentation of the facts themselves. Any mordid tendencies resulting from such unavoidable fear should be corrected by positive and constructive teaching as to the prevention and cure of the disease."

In dealing with Law Enforcement it was resolved that: "The establishment and maintenance of high standards of sex conduct is the best protection of public health from venereal diseases. . . . That up to the level of the highest standards which can be sustained by public opinion, less penalizing the promotion of and the indulgence in illicit sex relations constitute sound and practicable public health measures."

In dealing with sex offenders it was resolved that: "The establishment of reformatories with standard equipment for examination, classification, training, recreation and parole is the most hopeful method of rehabilitating the old offender."

The psychological aspect of the venereal disease problem, at least in one of its phases, was touched upon in the following resolution: "Although there is danger that superficial and erroneous interpretation of the Freudian psychology in regard to the repression of the sex instinct may be detremental to the successful development of the programme for the control of venereal diseases, a more thorough going, complete and scientific interpretation tends to aid such a programme in that it places the emphasis upon the practical means for guiding the sex instinct into socially useful and constructive activities."

The Committee emphasized the importance of social service, recreational facilities and measures for dealing with feeble minded delinquents and a host of other questions.

Exhibits and demonstrations were features of the work of the conference. Included in these were the methods of the United States hygiene laboratory in testing salvarsan, the application of the methods of social hygiene by the Washington police; and methods of treating venereal diseases at the United States Naval Hospital. Among the exhibits were wax models of the Army Medical Museum showing phases of venereal disease, and the social hygiene car for educational work now in use in North Carolina was brought to Washington for inspection by the delegates.

Among the 400 delegates at the conference were representatives from Argentina, Brazil, Chile, Equador, Cuba, Honduras, Mexico, Paraguay, Porto Rico, Canada, Czecho Slovakia and England.

Social Background

The Canadian National Council for Combating Venereal Diseases

The following statement is a summary of evidence presented before the Ontario Public Service Commission, on December 1st, 1920, by a group of social workers called together by the Toronto Branch of the Canadian National Council for Combating Venereal Diseases. It suggests that many reforms must be undertaken—aside from the mere provision of treatment—if we are to really grapple with the Venereal Disease problem.

General Statement.

It should be recognized that the primary functions of all Police Courts should be preventive rather than punitive and a stimulation of interest in the social aspects of crime should be encouraged.

General Recommendations.

(a). That adequate quarters be provided for the housing of all courts and for police activities with proper waiting-rooms and cells.

(b). That a Court of Domestic Relations be established.

(c). That the duties of the Morality Department be more closely defined.

(d). That adequate machinery be provided for enforcing the Deserted Wives' Maintenance Act.

(e). That a Woman Magistrate to alternature in her duties between the Women's Court and the Juvenile Court, and to deal with all cases pertaining to women and girls, be appointed.

(f). That an adequate staff of probation officers be secured for the Juvenile, Women's and Men's Courts, whose duties would include the investigation of cases, the keeping of records and the correlating of the activities of the agencies for rehabilitation.

(g). That complete records of all cases be kept by a card index system. (Note: Complete records are only kept of those cases charged with indictable offences).

(h). That a Detention Home be established for the reception of Court cases which require observation: physical, mental and social examination.

(i). That a psychiatrist be attached to all Courts to examine cases with previous Court records (recidivists) and where mentality is in question.

(j). That Women's Courts should be used exclusively for cases in which women are concerned. That the public should be excluded from the Women's Courts in all cases in which the detail of evidence would be injurious to public morals, with a view to raising the general tone of the Court.

(k). That a representative of the Department of Public Health should be present during the sittings in the Men's Court, in order to see that all men charged with sex offences are examined for the detection of Venereal Diseases.

(l). That the criminal and public health aspects of such cases should be kept distinct and separate.

(m). That in the administration of Laws unfair discrimination against women sex offenders should be guarded against.

(n). From a preventive point of view the Fine System is useless in such cases and should be reinforced or replaced by constructive work aiming at rehabilitation.

(o). That flippant accounts of serious proceedings, by the Press, should be discouraged.

(p). That women police are needed on the streets, in parks, skating rinks, dance halls and movies, as preventive agents.

(q). That greater activity of the police is needed to prevent street solicitation and sexual promiscuity.

(r). That the police be stimulated to greater activity in the enforcement of present legislation in regard to bawdy houses and that special officers be detailed to deal with this work.

Some Social Aspects of the Venereal Disease Problem

DR. R. H. PATTERSON.

The social aspects of the venereal disease problem or the way society looks at venereal diseases has to be absolutely revolutionized before we can even approach this problem, much less successfully solve it.

Society does not yet recognize venereal diseases, it buries its head in the sand and refuses to meet the enemy in the open.

IGNORANCE.

Only a few are working, and even among the workers are some who need their outlook on venereal diseases remodelled. In spite of statistics, facts and figures, the public is not alarmed. The interested ones, who attend the meetings, should act as missionaries and tell their non-interested friends a few facts, namely:

The gonorrhoea is the commonest of all diseases, excepting the most contagious of all, measles. Gonorrhoea outranks scarlet fever, smallpox, diphtheria, tuberculosis, etc., and it moreover causes more harm and destroys more health than any other disease. For example, 50 per cent. of pelvic operations in women and practically 100 per cent. of blindness in children. Many hundreds of women in our own city have had operations on their womb and ovaries caused, unknown to most of them, by gonorrhoea in their husbands. This means suffering, sterility and invalidism and, incidentally, the expenditure of thousands of dollars.

This ignorance can and will be overcome when society changes its viewpoint. Public ignorance is the basic factor. So very many cherish the belief that syphilis or gonorrhoea is proof of degradation, and the property of the down and out.

You cannot condemn and cast outside the pale of decency 60 per cent. of the male population, yet 60 per cent. of men have had gonorrhoea. The remaining 40 per cent. have more than likely been exposed and were fortunate in escaping infection.

Distinctions based on social status and class are irrational and only serve to muddle the efforts to face the issue squarely.

In our own local council for combating venereal diseases a remark was passed by an officer that he hoped the photoplay, then showing, would interest "that class" and "those kind of people." Venereal disease is *not* confined to any one class.

Even in the profession it is often seen, as Dr. Stokes, of Rochester, Min., states, that in examining the blood to ascertain the presence of syphilis, one test proving syphilis will condemn a labourer, yet two tests would be demanded before we condemn a bank manager, and three or four would be taken before we could be satisfied as to the guilt of a minister. Realize this and drop the attitude that it is a social class disease and limit it to another class than your own.

The second source of error is the exceedingly common belief that if the ravages of gonorrhoea and syphilis were published broadcast that the fear of acquiring these diseases would act as a check, and deter those seeking unsocial sexual gratification. But fear will not deter. Every one has that feeling that he can escape even if the next man falls.

A lecturer with pictures can give an enlightened talk and multiply horrors on horrors. But with what results! The weaker members of his audience work up an exaggerated mental picture, worry over it and eventually their mental condition is worse than their disease.

Horror is cheap, but makes a poor substitute for ideals. On honour and social responsibility, and not on enlightened cowardice will be squarely placed the burden of the sex ethics of the future.

Social Attitude.

The third greatest discouragement to a real square fight against venereal diseases comes from the educated and comfortable class, who refer to this social work as "diseases of vice," "the underworld," "that kind of work," and so on. Such utterances are heard from ardent church-goers and ministers, demonstrating again the belief that venereal diseases belong to the down and our members of society. Nothing will ever be gained from this attitude.

True enough there are mentally defective out and out moral wrecks; but even these respond to honour, are led by love, cling to friendship and show a streak of the square deal. There is no man or woman, who need feel he is besmirching his reputation to acknowledge brotherhood with these; and who is there, indeed, who is so perfect as to be entitled to refer to them as erring brothers, or fallen women?

There are so many, so very, very many who stand afar off and repeat, "I thank thee that I am not as other men are."

The Public Clinic and its Needs.

To help overcome public inertia and combat venereal diseases the Ontario Government has established venereal clinics. Locally our Hospital Out-door department has been conducting a free clinic to date. There are at present 77 taking syphilitic treatment.

The greatest help in this work would be a well-educated and a well-paid social service nurse. She would instruct female patients in the care of themselves and the protection of others.

She would follow up delinquents; this is sorely needed here. Over 60 persons have been reported who have neglected to continue treatment until cured, and not one has returned to the clinic. There is a law to compel them to continue treatment, but there is not the machinery in our local board of health to enforce it or follow them up. This gives Hamilton a definite number of known, unstopped sources of infection.

The nurse can assist in finding out sources of infection, and in seeking out carriers. The nurse will make social investigations and aid girls in returning to normal life. She can also address meetings and teach the dangers of infection and how to avoid it. She could meet teachers, church and social organizations and explain her work and the scope of public health. A social service nurse for this city reported for work this morning.

The Parents' Responsibility.

In conclusion, the final victory is in the hands of the parents. Not one girl who has come to the City Hospital for treatment for venereal diseases has been able to state that she received sex instruction at home.

Of 687 college men from good homes in the United States, 85.4 per cent. received their sex information from sources outside their home.

Your part, as parents in this campaign, is to instruct your own boys and girls. You cannot exempt yourself from this responsibility. Do you think that, while the neighbour's children may need some such information, your own children will never have any such need? It is no longer possible for you to choose whether your child will learn about sex or not.

The only question you have to decide is whether he or she will learn it from you or from some one else.

For better or for worse the prudery and silence connected with love, passion, temptation, marriage and vice are being replaced by an abundance of discussion and interpretation in literature, drama, and especially in "the movies."

Only an abnormally dull child fails to be curious about such things. If your child remains silent and fails to ask any questions, in nine cases out of ten he is getting information from outside.

Pathetic cases are seen in our local clinic daily, girls diseased and pregnant. Who is really to blame? The mother. It is shameful, criminal negligence for a parent to send children out into the world totally ignorant of sex. Remember venereal disease is not

common to one class, it is just as prepared to enter your home as your neighbour's.

Bring up the children with ideals. Do away with the Old Testament everlasting no's, as inculcated in "Thou shalt not." Give in its place the New Testament teaching, "Thou shalt love thy neighbour as thyself." Then you have an ideal containing the "no," and in addition an incentive, a something to work for.

The most emphatic emphasis must be placed on home training, a training that will teach children that honour is a virtue and that "Love thy neighbour as thyself" is a law. Then our children will give and receive a square deal and venereal diseases will be no more.

ONTARIO

The Provincial Board of Health of Ontario

Smallpox is again on the increase in the Province according to the reports sent in for the month of October. Of the 310 cases reported the city of Otttawa contributed no less than 122. The other 188 cases are scattered over 33 municipalities. One death was reported from the Township of Waterloo. For the month of September there were only 93 cases with one death.

Diphtheria continues to be prevalent in some localities. While the 710 cases is the greatest number reported for any month in the year, the deaths are much less than in some previous months, when the case mortality ran as high as 15 in a hundred, but for October it was only 6.3 being the lowest death rate of any month in 1920.

CASES AND DEATHS OF COMMUNICABLE DISEASES REPORTED FOR THE PROVINCE, OCTOBER, 1920.

COMPARATIVE TABLE.

	Oct., 1920		Oct., 1919.	
Diseases.	Cases.	Deaths.	Cases.	Deaths.
Smallpox	310	1	38	0
Scarlet Fever	387	3	277	2
Diphtheria	711	45	452	50
Measles	290	3	91	1
Whooping-Cough	218	22	166	6
Typhoid	148	34	98	21
Tuberculosis	152	130	169	135
Infantile Paralysis	3	1	14	1
Cerebro-Spinal Meningitis	6	4	5	3
Influenza	13	8	.....	.....
Primary Pneumonia	.....	142	.....	139
	2238	393	1310	358

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH FOR OCTOBER, 1920.

COMPARATIVE TABLE.

Diseases.	Oct., 1920. Cases.	Oct., 1919. Cases.
Syphilis	205	79
Gonorrhoea	303	121
Chancroid	19	3
	527	203

MUNICIPALITIES REPORTING SMALL-POX CASES FOR THE MONTH OF OCTOBER, 1920.

County.	Municipality.	Cases.	Deaths.
Brant	Brantford	30	0
Bruce	Kincardine Tp.	1	0
Carleton	Ottawa	122	0
	N. Gower	1	0
	Marlboro	1	0
Elgin	St. Thomas	2	0
Frontenac	Kingston	8	0
Hastings	Belleville	5	0
	Trenton	4	0
	Deseronto	11	0
Lambton	Brooke	1	0
Lanark	Beckwith	5	0
Leeds & Grenville	Elizabethtown	3	0
Middlesex	London	2	0
	West Missourie	10	0
Muskoka	Bracebridge	2	0
Nipissing	North Bay	3	0
	Mattawa	4	0
	Cartier	6	0
	Sturgeon Falls	12	0
	Caldwell	34	0
Norfolk	Waterford	3	0
Northd. & Durham	Bowmanville	1	0
Prescott & Russell	Cumberland	1	0
Simcoe	Orillia	1	0

Stormont, Dundas & Glengarry	Cornwall	1	0
	Williamsburg	2	0
	Morrisburg	5	0
Sudbury	Sudbury	5	0
Thunder Bay	Port Arthur	3	0
Waterloo	Kitchener	2	0
	Galt	1	0
	Waterloo Town	3	0
	Waterloo Township	1	1
Wellington	Peel	4	0
Wentworth	Hamilton	6	0
York	Toronto	4	0
		311	1

News Items

The University of British Columbia, Department of Public Health, has announced a short course in public health nursing commencing on November 15th, 1920 and continuing until March 4th, 1921. The course is open to nurses in good standing who have graduated from a recognized Training School connected with a hospital of not less than fifty beds, and giving a three years' course of instruction, and who are also eligible for registration in British Columbia.

The course consists of six weeks of academic work followed by eight weeks of field work. Upon its completion an examination will be held and to successful candidates a certificate will be issued, the holding of which will be considered a qualification for positions in Public Health Nursing under the Provincial Board of Health.

Dr. W. H. Howell, Dean of the School of Hygiene and Public Health of Johns Hopkins University, delivered a lecture on "Science and Public Health," before the Royal Canadian Institute, Toronto, on November 27th last.

It is desired to correct an error in the November number of the PUBLIC HEALTH JOURNAL, where in a News Item it was announced that Dr. A. Grant Fleming had taken up the duties of Medical Office of Health, Toronto. This is, of course, incorrect. Dr. Hastinsg is Medical Officer of Health, Toronto, and Dr. Fleming has been appointed Deputy Medical Officer of Health.

It is reported that Dr. R. H. Mullin, Bacteriologist to the Vancouver General Hospital and Professor of Bacteriology in the University of British Columbia, has been appointed to the chair of Public Health in the University of British Columbia.

Dr. A. C. Anderson has been appointed Bacteriologist in the Main Laboratories of the Provincial Board of Health of Ontario, 5 Queen's Park, Toronto.

Dr. Hugh W. Johnston, Fort Frances, has been appointed District Officer of Health of the Provincial Board of Health of Ontario, to work in District No. 8, which District has just been created.

It is announced by the Rockefeller Foundation that a sum of two million dollars has been granted to certain Canadian Universities, as follows:—

University of Toronto and McGill University each receive one million dollars; Dalhousie University and the University of Manitoba each receive five hundred thousand dollars. In addition, the University of Montreal and the University of Alberta are to receive twenty-five thousand dollars for the current year and may receive further financial aid. The money thus allocated is to be used for the purpose of the Faculties of Medicine of these Universities.

It is with great regret that readers of the PUBLIC HEALTH JOURNAL will learn of the sudden death of Mrs. Ruggles George, wife of the Director of the Division of Information on Public Health of the Canadian Red Cross Society. The PUBLIC HEALTH JOURNAL wishes to extend to Dr. George deepest sympathy.

Dr. C. J. Hastings, Medical Officer of Health, Toronto, visited Chicago during the week of November 22nd where he addressed meetings which were held during Chicago's special public health week.

The Massachusetts-Halifax Health Commission desires to obtain the services of a Bacteriologist qualified to do public health bacteriological work. Full details with reference to this opportunity may be obtained on application to Dr. B. Franklin Royer, Executive Director of the Massachusetts-Halifax Health Commission, Halifax, N.S.

Dr. Gordon Bates, General Secretary of the Canadian National Council for Combating Venereal Diseases, visited the Provinces of Manitoba, Saskatchewan, Alberta and British Columbia during the month of November. Meetings were held in several cities, and new Branches of the National Council were formed.

Dr. J. W. S. McCullough, Chief Officer of Health, of Ontario, spent some time in Washington during the latter part of November,

in attendance at the Institute for Venereal Disease Control organized under the auspices of the United States Public Health Service.

Mrs. Neville Rolfe, O.B.E., Secretary for the National Council for Combating Venereal Diseases in Great Britain, was a recent visitor in various Canadian cities. Mrs. Rolfe addressed a number of well-attended meetings and stimulated much interest in the methods employed in the British National Council in carrying on their work.

Dr. George D. Porter, General Secretary of the Canadian Association for the Prevention of Tuberculosis, addressed a series of meetings in Western Ontario during the month of November. Increased activities in anti-tuberculosis work has been the result in many centres where meetings have been held.

Dr. Hunt has been appointed a clinician in the Division of Venereal Diseases of the Provincial Board of Health of Ontario. The personnel of this Division now includes three physicians and a public health nurse.

The Public Health Nurses of the Division of Maternal and Child Welfare and Public Health Nursing of the Provincial Board of Health of Ontario are at present making demonstrations and holding meetings in various centres in Ontario. The purpose of the work at present is to arouse interest in local communities where meetings are held in the problems of maternal deaths, infant mortality and other public health problems.

Miss E. Kathleen Russell has been appointed Director of the Department of Public Health Nursing in the University of Toronto.

The City of Galt has appointed a Public Health Nurse for general public health nursing work in that City. To Dr. Radford, M.O.H., Galt, and Dr. R. E. Woodhouse, D.O.H., District No. 2, largely belongs the credit in this progressive move in Galt.

The Canadian Red Cross Society has in contemplation the launching of a public health nursing scheme for the Province of Prince Edward Island. The effort will probably be in the nature of a demonstration and the results obtained will largely influence subsequent efforts of a like sort.

NOVA SCOTIA.

Changes in the staff of the Department of Public Health, Nova Scotia, have occurred as follows:—

Dr. J. A. Doull has resigned his position as Provincial Inspector of Health, to pursue further studies at the Johns Hopkins University. He has been awarded a Rockefeller Fellowship in Public Health.

Dr. A. C. Jost, formerly Divisional Medical Health Officer (Eastern Health Division), has been appointed Provincial Inspector of Health.

Col. H. A. Chisholm, R.C.A.M.C., C.M.G., D,S,O,, has been appointed to succeed Dr. Jost as Divisional Medical Health Officer. He will take duty January 1st.

Miss Margaret MacKenzie has been appointed Superintendent of Nursing Service. Miss MacKenzie is the first to hold this appointment.

Doctors Doull, Jost and Chisholm and Miss MacKenzie, have all rendered conspicuously good service with the Canadian forces overseas.

Public Health Clinics have been established in the counties of Antigonish, Pictou, Colchester, Cumberland, Hants and Kings, and public health nurses have been assigned to duty in each of these counties. These nurses, although working under the direction of the Department of Public Health are being maintained for the first year of their service by the Nova Scotia Branch of the Canadian Red Cross Society. By the first of January three other counties (Lunenburg, Yarmouth and Victoria) will have clinics in operation, and public health nurses at work. This will mean that half the counties of the Bluenose Province will then be organized in this way.

Venereal disease treatment centres are now being operated by the Provincial Health Department in Halifax, Sydney, New Glasgow and Yarmouth. Other centres will be opened shortly in Amherst and Lunenburg. The Federal Department of Health is cooperating in this work.

Editorial

More Work and Less Talk

THE recent increase in the number of organizations engaged in a voluntary capacity in public health work, whether as an exclusive activity or included in a general programme of Social Welfare work, is worthy of note. The greatest need at the present time, however, is not only co-ordination and co-operation (much over-burdened terms) but less striving for individual or organization credit and more honest endeavour! Not more but fewer conferences, meetings and discussions, and more actual individual effort by those who confer, meet and discuss, is needed! Let us cease giving vent to hypocritical outbursts of self-congratulation (in circular letters and otherwise) which are not only untimely but entirely unjustified!

Two New Publications

TWO publications of more than ordinary significance to Public Health Administrators and others interested in the questions of public health administration, have recently appeared. The first of these is a reprint of a memorandum by Sir George Newman, Chief Medical Officer of the Ministry of Health, and is entitled "An Outline of the Practice of Preventive Medicine."

This monograph deals with the purpose of Preventive Medicine, the growth of the subject, present problems, lines of reform and some elements of a National Policy.

It is a most valuable contribution and is especially timely in its appearance. To be thoroughly understood and appreciated it should be read and studied and the health officer who does so will be amply rewarded.

The second publication is a book in which appear a series of addresses by Sir Arthur Newsholme: "Public Health and Insurance," published by the Johns Hopkins Press. As the author points out in the preface the volume discusses public health problems from a social viewpoint, and it should be read by all engaged in public health work.

Book Review

Bacteriology for Nurses, by HARRY W. CAREY, A.B., M.D. 2nd Edition. Publishers, F. A. Davis Co., Philadelphia, Pa. $1.25 net. 143 pages.

Dr. Carey has been successful in the compass of this small book, in presenting the subjects of bacteriology and immunity, in such a way that nurses in training may grasp the subjects, without a mass of detail. No opportunity is lost to show practical applications to nursing. In this connection it is rather unfortunate that the author has attempted to discuss the control of certain diseases. Reference might be made to the definition of the terms "contagious" and "infectious" which are now discarded for the clearer and more comprehensible term "communicable." A valuable chapter on the collection of material for bacteriological examination contains specific directions which are of first importance.

BOOKS RECEIVED DURING NOVEMBER.

"Practical Massage and Corrective Exercises with Applied Anatomy," by HARTVIG NISSEN. Fourth Revised Edition. F. A. Davis Company, Philadelphia. 1920.

"Bacteriology for Nurses," by HARRY W. CAREY, M.D. F. A. Davis Company, Philadelphia.

"Short Talks on Personal and Community Health," by LOUIS LEHRFELD, M.D. F. A. Davis Company, Philadelphia.

"Travelling Publicity Campaign," by MARY SWAIN ROUTZAHN. Russell Sage Foundation, New York.

"An Epitome of Hydrotherapy for Physicians, Architects and Nurses," by SIMON BARUCH, M.D., LL.D. W. B. Saunders Company, Philadelphia and London.

"Travelling Publicity Campaigns." Russell Sage Foundation, New York.

PATTEE'S *"Practical Dietetics."* Publisher A. F. Pattee, Mount Vernon, N.Y., also *"State Board Requirements in Dietetics and State Board Examination Questions."*

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